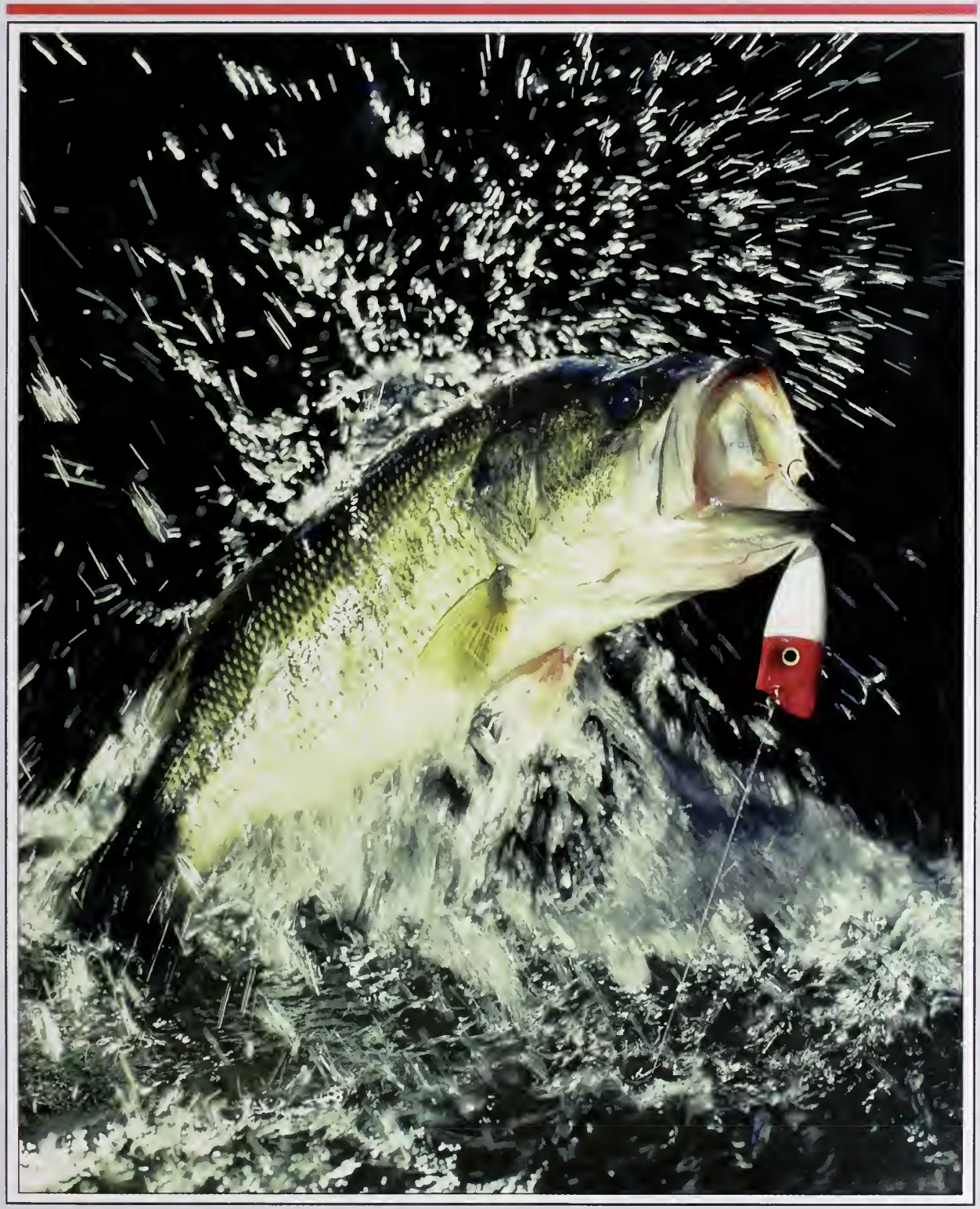
VIRGINIA WILDLIFE

JULY 1992 ONE DOLLAR



Fish Identification Guide Inside

Out on a Limb

"Any sensitive human being will realize that they're very fortunate to have been born into this marvelous complex mass of color and sound and everything else, and that you shouldn't leave it without at least putting a tip on the table."
—Gerald Durrell, ***International Wildlife****, July/August 1988.*

Every summer I find myself sitting on the kitchen floor picking fleas off my French Brittany bird dog and exterminating each one by slow, soapy death. It is a torture by water I greatly enjoy. Every night I must kill over 100 fleas, and I gleefully count each one suspended by the soap bubbles in the dish. I have no feeling for fleas.

Neither, however, do I have much love for blue jays, starlings, mosquitoes or tarantulas. Once, while on a biology trip to the Florida Keys, a young self-proclaimed naturalist calling himself "Cosmos X" struck up a conversation with my biology professor, a then 65-year-old veteran snake collector, botanist, and overall expert on all things wild and natural, while admiring a set of turtle tracks on a beach. Cosmos X brought out his pet tarantula from the back seat of his car for Miss Sprague's inspection. She nodded approvingly as Cosmos X detailed his lady spider's natural history. Later, she did momentarily ponder the oddness of the young man's name, but never did she pause over his close association with an arachnid.

For Miss Sprague, nothing in the natural world was to be judged. To love anything of the natural world, be it a snake, orangutan, tarantula or hummingbird, was good. And in her eyes, having a beak and lustrous feathers or a wet nose and silky fur never guaranteed an edge over those with bulging eyes, hairy legs, and bloodthirsty bites—all species shared in her affection equally.

I, unfortunately, am not so pure of heart. I hate blue jays for stealing young birds out of their nests and eating them. I detest herring gulls for plucking fluffy, orange-footed baby oystercatchers from the surf just as they are making their first and only mad dash to the sea. And I will never, ever spare the life of a flea.

It is curious, though, that my two dogs are spared my wrath. I cried out one day this spring when they uncovered a nest of rabbits and snatched two of the tiny babies hopping away, shaking them dead within seconds. I felt terrible about the incident, and blamed myself—not my dogs.

Most of us, it seems, have definite ideas about what is bad is this world and what is good. If we don't have an opinion about something, it's only because we don't know anything about its virtues or vices. But give us a couple of days with the animal, insect, or bacteria, and we'll pronounce it lovely or loathsome.

Of course, we do reserve the right to change our minds if new information becomes available to us. Why, look how hateful we all thought bats were 20 years ago. Yes, I know some still shudder over the mere picture of their sinister fangs and bony wings, but most of us have become sufficiently enlightened to realize how very wonderful they are in keeping us free from the bite of the truly despicable mosquito.

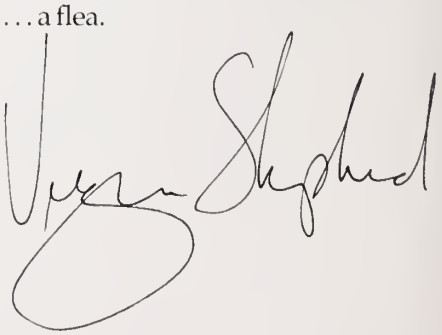
As ordinary, imperfect human beings, we just can't shake the delicious urge to judge. It is entirely too tempting for most of us to accept things just as they are without pronouncing them good or bad, angels or devils. Like kings and queens for a day, we can't resist solemnly proclaiming whether or not an organism has the right to survive.

Mostly, however, our innocent playacting as All-Knowing Beings results in no real evil consequences. We squash a few bugs, drown a couple hundred (no, thousand!) fleas, and mash a few uninvited crickets. We only get into trouble when we start believing in our Most Omnipotent Selves.

You see, we haven't earned the right to rule, even though we have the power to do it. We haven't been properly trained in the finer points of king or queenship, and since monarchies really aren't in vogue much anymore, there's not much interest in discussing how (or how not) to behave in a dignified, decent, and high-minded manner. It's no wonder we've unintentionally turned into tyrants.

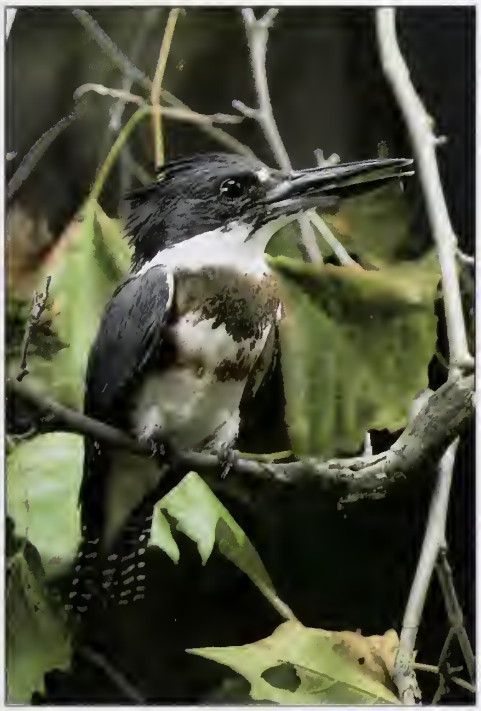
Yes, we are beginning to grow a bit too fond of our borrowed crowns and scepters these days. We are beginning to presume an awful lot about a lot of living things. Frankly, I, for one, am quite glad I turned out human, since I'm sure if I were some other kind of animal, I would have done one too many wicked things by now to have survived the severe judgment of the human race. And, I am so very glad I didn't happen to be put on this Earth as a spotted owl or piping plover. It's one thing to be just another pretty face as an ordinary woman, and quite another to be just another pretty bird that happens to be in the way of progress.

I believe it may be time to politely tell ourselves to hang up the royal robes until we really know how to wear them, and step back into our mortal rags for more schooling. A little humility goes a long way in the hands of the powerful, especially when you realize that in the end we really aren't much more important than a tarantula, or . . . dare I admit it? . . . a flea.



Largemouth bass are just one of the favorite fish of anglers across the Commonwealth. To become acquainted with the rest of them, turn to our identification guide beginning on page 10; photo by Soc Clay.

VIRGINIA WILDLIFE



Birdwatching is a fast-growing sport in Virginia. Learn how to introduce your kids to its lifelong pleasures; photo by Rob Simpson.

Cover: Largemouth bass; photo by Doug Stamm.
Back Cover: Don't let the sporting year get away from you—order your Virginia Wildlife Sportsman's Calendar today! (wood duck photo by Joe Mac Hudspeth)

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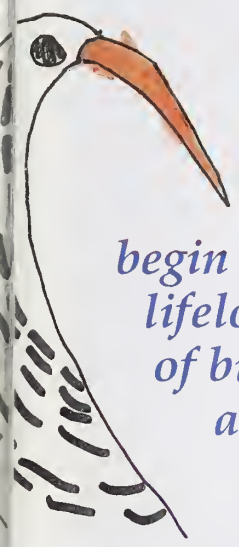
Dedicated to the Conservation of Virginia's Wildlife and Natural Resources

Kindergarten Bird

photo by David Liebman.



Kids are never too young to begin learning the lifelong pleasure of birding. Here are some tips to get them started right.

ing

By Soc Clay

Across America, families and especially kids are showing a growing interest in all sorts of outdoor activities. Backpacking is experiencing an upward surge in popularity. More families are camping in tents, riding horseback, walking, and cross-country skiing. You name it and if it's healthy, fun and economical to boot, chances are good that kids from your own neighborhood have already experienced one phase of outdoor recreation or another.

Heading the list of the outdoor wonders attracting strong family participation in the 1990s is bird watching, more commonly referred to as "birding." Entire families from toddlers on up are discovering how interesting birds can be. Statistics show that a vast majority of Americans of all ages enjoy visits to local, state and national parks to take in the sights and sounds of nature more than any other recreational activity. Part of this attraction is learning more about birds and where and how they live.

There was a time when anyone who fancied a strong interest in bird life was immediately pictured as a scrawny little fellow wearing a sun helmet, short pants, thick glasses and carrying a dip net. Most people believed birders were a bit "unusual" to say the least. Thank goodness, times have changed.

Youngsters, especially, are beginning to realize the vital role bird life plays in the natural order of things. Kids are learning that birds not only sing for our enjoyment, but are also extremely interesting critters who bear watching for the sheer pleasure of it. What kids are discovering about the subject of birds would amaze even adults, some of whom still believe that birds are simple little creatures that don't warrant much attention. For instance, kids who have been exposed to the wonderful world of birding know that the common swifts of Europe are considered the fastest birds in the world, often streaking through the heavens with bursts of speeds upward to 200 miles per hour; that geese have been known to fly as high as 30,000 feet; that the most dangerous bird of all is the cassowary of New Guinea and Australia, being able to cripple or kill a person with one kick of a foot that bears a knife-like claw; and that the Arctic tern migrates from the Arctic to the Antarctic—a distance of some 22,000 miles—just to turn around and make the trip again; and that the common crow is considered the most intelligent bird of all.

Kids who study birds learn early that these wingsters are social animals nearly as complex as ourselves. They observe how birds establish territories, go about courting, building houses, and learning their languages. Kids discover how birds find directions, and they dig up a thousand and one other characteristics that are associated with an average day in a bird's life.

And, birding is not only great fun for kids, it also gives parents a break in the financing. The cost of getting a child started in this fascinating and perhaps lifelong hobby is often less than the price of a new pair of sneakers. The most costly pieces of equipment needed are a pair of binoculars and a field guide to bird identification. Kids just getting started in birding will need a pair of binoculars of about eight power in magnification. Today's compact binoculars are powerful, the optics are extremely clear and the weight is next to nothing—even for small kids. Binoculars that feature Insta-focus or Permafocus offer super-fast focusing and come in handy when observing an energy-packed bird such as the Carolina wren or the fast flight of a swallow.

The cost of binoculars can vary from about $30 at some discount stores to as much as several hundred dollars for top of the line glasses.

As for field guides, there are a number available in a variety of sizes and prices. A trip to the local book store is suggested to find a book that best suits the needs and sophistication level of the beginning birder. Two common publications used by

Above illustration by Scott (age 5).

birders both young and old throughout America are *A Field Guide To The Birds* by Roger Tory Peterson (Houghton Miffin) and *Birds Of North America* by Robbins, Brunn & Zim (Golden Press).

An important aspect of birding for kids is keeping count of the different birds that are identified. Most birders use a small notebook and begin a "trip list" for each bird-watching session. The idea is to enter the name of each bird identified, the time of day it was spotted and the date of the expedition. Later, youngsters can determine by their notes the birds that are more common to each area and those that are rarely seen.

On family trips afield, each member carries a notebook. For kids, each species becomes a spelling lesson and they take great pride in the trip as the number of bird species that are found and identified grows.

A "life list" is also important. The idea is to have the kids record each new bird that is identified for the first time. Life lists offer the same challenges as stamp collecting. But parents be warned; youngsters who take birding seriously will be working on adults to take them where new species and varieties of bird life are found.

Kids soon learn that birds are everywhere. In urban areas, familiar species such as the robin, sparrow, jay, crow and pigeon are common sights in small backyards. Nearby parks offer a broader variety, and remote woodlands, swamps and streamsides provide excellent opportunities to discover almost every bird native to a particular region.

When accompanying kids on field trips, adults should search out places where there are large rocks, trees, shrubs and water. Birds like these spots and often frequent them in large numbers. Remember, too, that birds are most active during early morning and late afternoon—good times to plan a birding session.

After a few trips to bird sanctuaries, kids discover that common species can be easily picked out by sight. However, to identify some of the rarer birds, a field guide that features good quality color photographs or paintings is a must.

In order to match the new bird kids see in the wild with the image in the guide, close observation is required. Here are some things kids should look for:

COLOR—Note the bird's predominant color. Next, determine what colors appear on the bird's head, throat, wings, belly and tail. A closer look will show certain colors on the bill, legs and feet.

SILHOUETTE—What shape is the bird? Is the body short and plump? Does it have a long or short tail? Is the tail forked or rounded? Is the head crested or smooth? Is the bill straight or curved?

MARKINGS—Some birds have stripes or patches on their wings. Are there distinctive rings around the eyes or bill? Locate any bands of yellow on the tail.

FLIGHT PATTERNS—Some birds, such as swallows, glide gracefully. Others, like the goldfinch, fly in great roller coaster dips. While looking at the bird in flight, kids should note changes in direction and speed. Once they become familiar with flight patterns, they can identify flying birds at great distances even without the aid of binoculars or a field guide.

SONGS- It's a good idea for young or beginning birders to arrange a trip afield with an experienced birder to learn more quickly the different bird

*Birdwatching is an inexpensive sport (**opposite**; photo by Rob Simpson). A good pair of binoculars and a field identification guide are the only essentials for this game. Plus, learning about birds through birdwatching leads to fascinating discoveries. For example, the belted kingfisher (**above**; photo by Rob Simpson), common around the waters of Virginia, is one of the few small birds that dives headlong into water after fish. The Eastern bluebird (**top**; photo by Vinyard Brothers), on the other hand, is known for its ability to snatch insects on the wing and has made a dramatic comeback to our farms and pastures with the help of bluebird nest boxes. Opposite illustration by Kristin (age 7).*

songs. It helps to make up words that catch the sound and rhythm of the bird's song.

The musical warble of the robin sounds to many like "cheer up cheerily, cheer up cheerily." The whistle of a cardinal is much like "what cheer, what cheer." Some birds have several different songs and calls. Kids will find interesting detective work in discovering what bird goes with which songs.

When kids approach birds for observation, they should walk slowly and quietly straight toward them. Birds are very poor judges of distance from head on, but will be alerted quickly when approached from either side.

After a few feet, the child should stop and study the bird. Have them notice whether it is on the ground or in a shrub or tree. Does it walk, hop or climb? When this behavior is noted, they should walk closer and observe the bird once more.

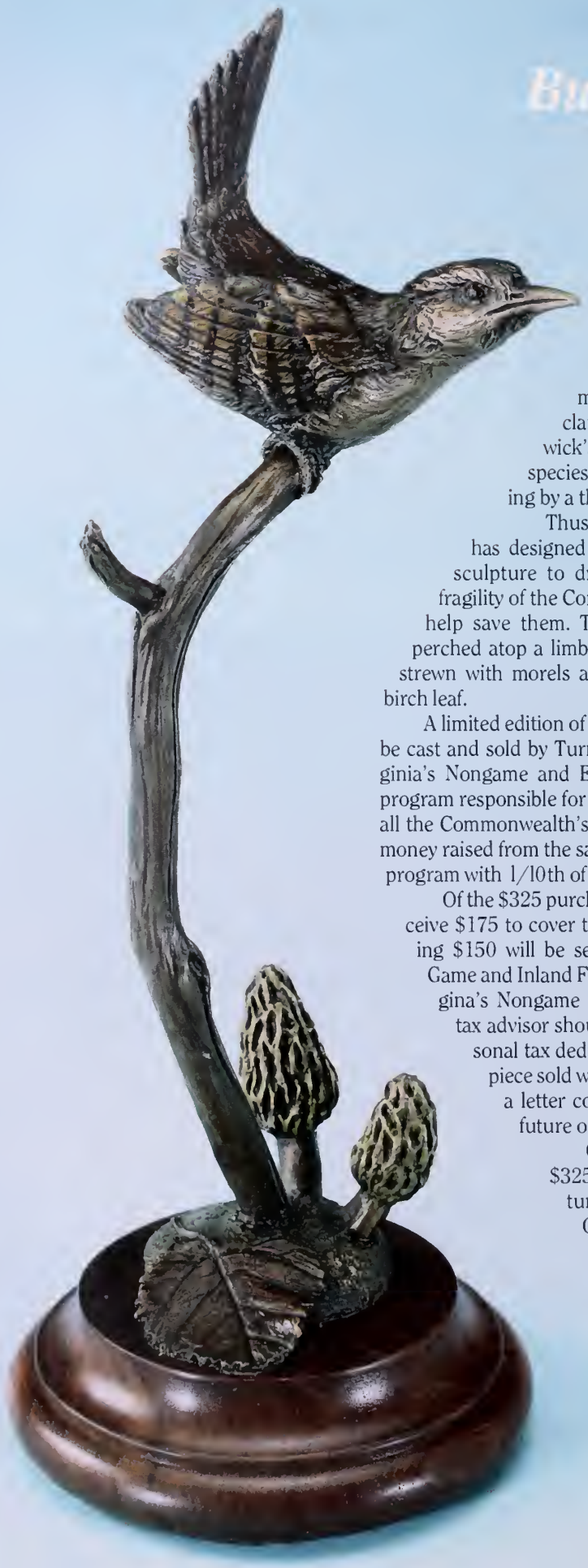
After completing the observation, kids should check their field guides to make sure they have identified the proper species. The first thing to notice is whether the bird is common in their area at that time of the year. When they are convinced that the bird has been properly identified, they should put down the time and place in their notebooks.

Once the basics of birding have been mastered, an almost infinite variety of birds wait to be discovered, identified and classified. Worldwide, there are more than 9,000 species of birds that literally live in nearly every region of the globe. Such a variety often inspires birders—both young and old alike—to travel great distances to make a record of a new species for their life lists.

To the skeptic who believes that birds are insignificant creatures, they may be reminded that songbirds have inspired musicians, artists, writers and poets from days of old. Before man mastered the skyways, birds were studied for years to determine the secrets of flight. Finding out that birds have hollow bones and air sacs or pockets that make them lighter most certainly contributed to man's technological ability to build and fly airplanes.

What other fascinating discoveries kids will make while watching birds is difficult to predict, but chances are good that many of them will be made by those who began watching birds when they were only kids. □

Soc Clay is a wildlife photographer and freelance writer from Kentucky.



Buy one for a Song

The cheerful *chip, chip, chip, de-da-a, te-dee* of the Bewick's wren is seldom heard in the mountains of Virginia anymore. Declared endangered in Virginia, the Bewick's wren represents just one of many species of wildlife whose survival is hanging by a thread in our state today.

Thus, David Turner of Turner Sculpture has designed this delicate 12-inch high bronze sculpture to draw attention to the beauty and fragility of the Commowealth's wildlife in an effort to help save them. The enchanting Bewick's wren is perched atop a limb that pokes up from a forest floor strewn with morels and single rare Virginia round-leaf birch leaf.

A limited edition of 200 of these bronze sculptures will be cast and sold by Turner Sculpture solely to benefit Virginia's Nongame and Endangered Species Program, the program responsible for the management and protection of all the Commonwealth's rare and endangered wildlife. The money raised from the sale of this sculpture will provide the program with 1/10th of its present operating budget.

Of the $325 purchase price, Turner Sculpture will receive $175 to cover their production costs. The remaining $150 will be sent to the Virginia Department of Game and Inland Fisheries as your contribution to Virgina's Nongame and Endangered Species Fund. A tax advisor should be consulted regarding the personal tax deductibility of this contribution. Each piece sold will include a certificate of origin and a letter confirming your contribution to the future of Virginia's wildlife.

Order your sculpture by sending a $325 check made out to Turner Sculpture to: Turner Sculpture, Box 128, Onley, VA 23418. For credit card orders, call: (804) 787-2818.

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by Bob Henley

A limited edition of 950 . . .
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We are proud to offer wildlife artist Bob Henley's limited edition print of two red foxes in snow to our *Virginia Wildlife* subscribers. Bob Henley's breathtaking work has been featured in the February and July 91 issues of *Virginia Wildlife,* and for weeks after those magazines appeared, people called us inquiring about Bob Henley prints for sale. We realized that our subscribers weren't content to have a Bob Henley work in their magazines, they wanted one for their walls! And, lo and behold! Bob has allowed us to make a special offer to our subscribers. First, you can have your very own 13"x19 1/2" *Winter Comfort* print for $35 when you buy two one-year subscriptions to *Virginia, Wildlife.* That's a savings of $10 off the regular price of *Winter Comfort.*

Of course, if you've already given everyone you know (including yourself) a subscription to *Virginia Wildlife,* you can still purchase *Winter Comfort* for $45. Any way you look at it, we hope you're as happy as we are about the opportunity to own a Bob Henley limited edition print for under $50. Orders yours today!

Use the gray card in this magazine to order your prints and subscriptions, or send in your list of gift subscriptions and the number of prints ordered with your check made out to: *Treasurer of Virginia,* to: *Virginia Wildlife,* P.O. Box 11104, Richmond, VA 23230-1104.

Freshwater Game Fish Poster

The Virginia Department of Game and Inland Fisheries has produced a full-color 21" X 36" poster of 23 freshwater game fish in Virginia. This identification poster of fish includes largemouth bass, trout, crappie, catfish, perch and pickerel, and can be purchased by sending a check for $8 to:
Fish Poster, Virginia Department of Game and Inland Fisheries, P.O. Box 11104, Richmond, VA 23230-1104. Please make check payable to: Treasurer of Virginia. ☐

What's that Fish?

Have you ever wondered what kind of fish you just pulled up out of your favorite fishing hole? Here's an identification guide to common fish in Virginia. You need never meet a stranger from the watery depths again.

Guide and Illustrations
By Spike Knuth

Largemouth Bass

Common Names: Black bass, green bass, bigmouth, linesides, brass bass, mossback.

Identification: Sunfish family. Light-green to brown back and upper sides, fading to a near-white belly, with a dark horizontal band along midline from gill to tail. Named because of its big mouth. Upper jaw extends well beyond the eye. Dorsal fin deeply notched. Fish average 2 to 4 lbs., up to 10 lbs. common.

Feeding Habits: Opportunistic, eating fish, frogs, crayfish, tadpoles, insects, mice, snakes, turtles, ducklings.

Habitat: Native to southeastern Virginia, introduced statewide. Inhabits warm, shallow lakes, ponds, and sluggish streams, with plenty of submerged vegetation, brush, and logs; usually in depths of less than 20 feet; prefers temperatures of 68° to 78°F. Has adapted well to large reservoirs where it orients on drop-offs, ledges, underwater islands, sunken timber, docks and bridges.

Spawning Habits: Spawns in late April to early June as water warms to 62° to 78°F. Male fans out a saucer-shaped nest in protected shoreline area of gravel, sand or mud. Following spawning, females leave nests and males guard eggs and fry.

Best Fishing: Lakes: Anna, Gaston, Buggs Island, Chickahominy, Chesdin, Smith Mountain, Smith, Burton and Whitehurst. Rivers: James (below fall line) and most coastal plain or piedmont streams.

Fishing Techniques: Fly, medium spincasting, and baitcasting rods and reels; use surface lures, plastic worms, crankbaits, spinnerbaits, jigs, and other lures imitating minnows, crayfish, frogs, nightcrawlers, etc.

Smallmouth Bass

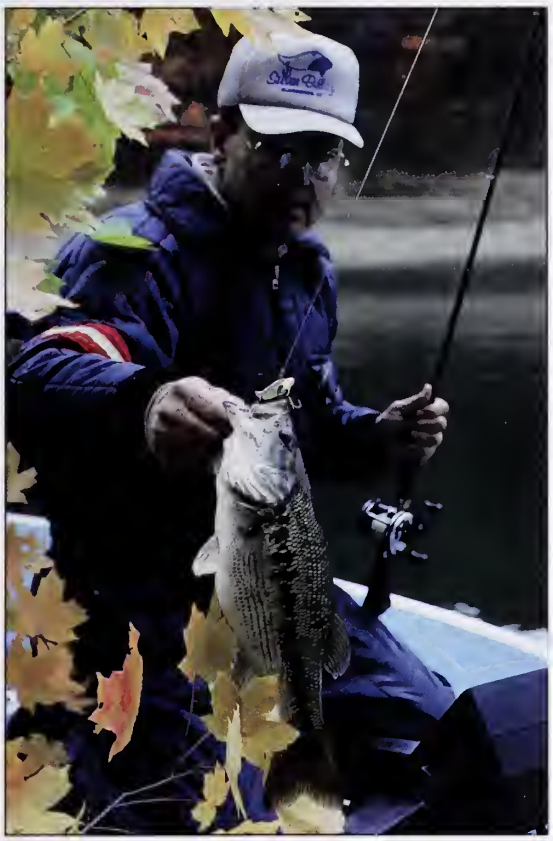
Common Names: Bronzeback, brown bass, black bass.

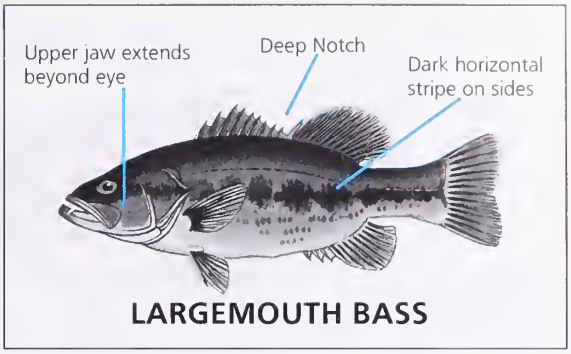
Identification: Sunfish family. Copper, brown, brownish-green sides with darker vertical bars. Three dark bars radiate from eye. Dorsal fin not as deeply notched as largemouth. Upper jaw extends back only in line with middle of eye. Does not reach size of largemouth; 4 to 5 lbs. considered a trophy.

Feeding Habits: Crayfish are a favored prey; also feeds on adult and larval insects, tadpoles, and small fish.

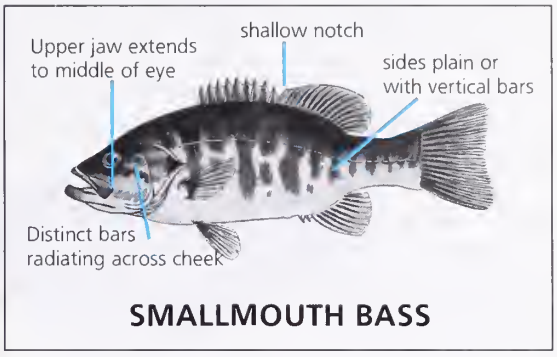
Habitat: Native to Ohio River drainage streams of southwest Virginia, introduced into most fast flowing streams and cool lakes. Prefers clear flowing streams and rivers with rock, bedrock and gravel bottoms and numerous riffles and cool deep water of large, clear reservoirs with good portion of boulders and gravel. Most active in 67° to 72°F water. Intolerant of silty or polluted water.

Spawning Habits: Males build nests on sand, gravel, or rubble bottom, usually 2 to 4 feet deep, as water stabilizes above 55° F. Spawning occurs in late April to early June as temperatures exceed 60°F. Males guard nest and fry up to two weeks after fry leave nest.

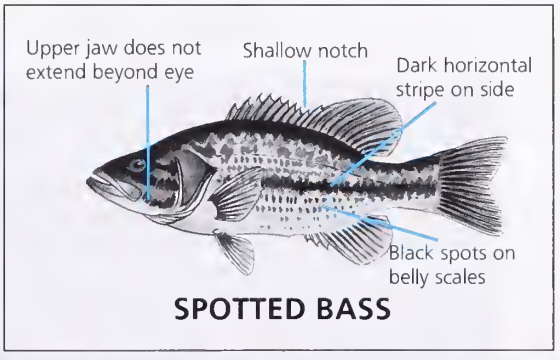




LARGEMOUTH BASS



SMALLMOUTH BASS



SPOTTED BASS

Best Fishing: Lakes: Claytor, Smith Mountain, Philpott, South Holston, and Moomaw. Rivers: James (above fall line), New, Shenandoah, and Rappahannock.

Fishing Techniques: Lightweight rods with 4 to 8 pound test line are preferred for the "scrappiest" freshwater gamefish, using live crayfish, hellgrammites, "spring lizards," and minnows or artificial dark-colored marabou or twister-tail jigs, floating minnow imitations, surface lures, spinners, and crankbaits. Fly fishing with hair bug and cork poppers, dry flies, and streamers.

Spotted Bass

Common Names: Kentucky bass, spot.

Identification: Sunfish family. Much like the largemouth and smallmouth, it is called the "in between" species. Distinguished from smallmouth by dark, blotchy lateral band from head to tail. Conclusive difference with largemouth is jaw length; back of spotted bass upper jaw lines up with middle to rear of eye, while largemouth jaw goes back past eye. Derives name from black spots on belly scales. Most 1 lb. or less; 2+ pounders rare.

Habitat: Native only to New River drainage in Virginia, not widely stocked. Warm, slow moving streams and stream-like areas of reservoirs. Prefers water temperatures in mid-70s.

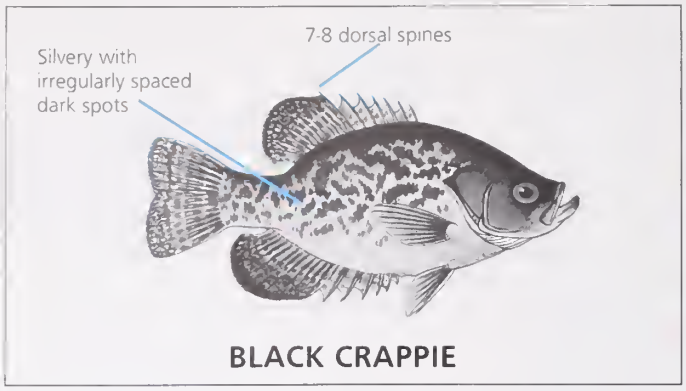
Feeding Habits: Crayfish, small fish, larval and adult insects.

Spawning Habits: Spring when water reaches 63° to 68°F. Males sweep silt from gravel or rock bottom to make nests near brush or logs, and guard eggs and fry for up to a month.

Best Fishing: Lakes: Claytor and North Fork Pound. Rivers: New and Appomattox.

Fishing Techniques: Light to medium spincasting and medium baitcasting rods and reels. Similar baits as for largemouth, but should be smaller; spinnerbaits,

*Opposite page: Largemouth bass; photo by Garry Walter. **This page, top left:** Spotted bass; photo by Soc Clay. **Above:** Smallmouth bass; photo by Doug Stamm.*



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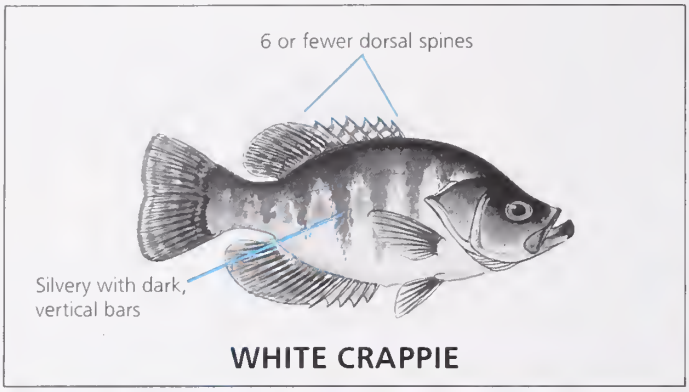

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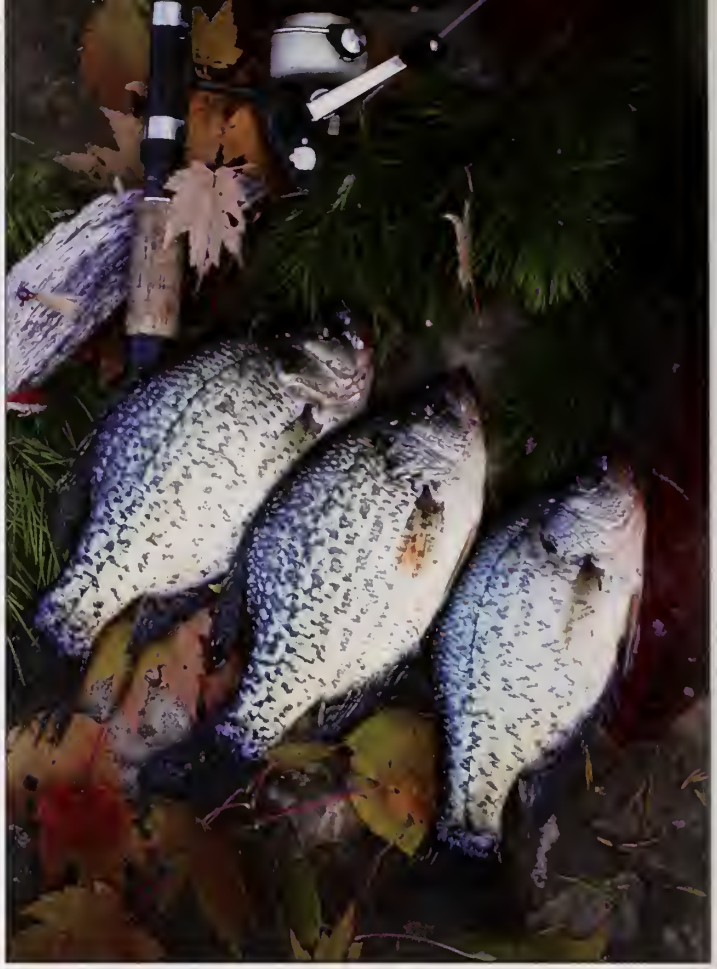


This page, above right: *Black crappie; photo by Soc Clay.*
Above: *White crappie; photo by Rob Simpson.*
Opposite page*: Redear sunfish* ***(top)****; photo by Doug Stamm.* ***Bottom right****: Redbreast sunfish; photo by F. Eugene Hester.*

The Crappies

Common Names: Specks, calico bass, speckled bass, and papermouth.

Identification: There are two species of crappies, black and white. The black crappie is covered with dark irregular blotches and has seven—rarely eight—dorsal spines. It shows more yellowish and greenish on its sides, and its anal and caudal (tail) fins are heavily flecked. It has a protruding lower jaw.

The white crappie has six spines—rarely five—and it has noticeable vertical bars on its sides as well as a light pearlescent color or iridescent blue and lavender.

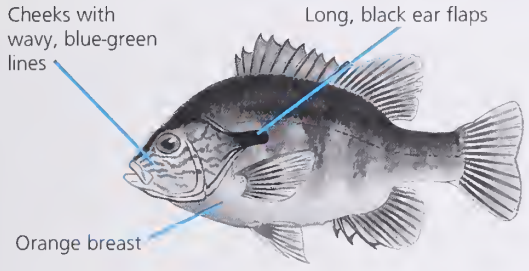
Feeding Habits: Minnows and other small fish are most favored but will eat nymphs, crustaceans and insects.

Habitat: Rivers and streams of the coastal plain, mill ponds, swamps, tidal creeks, small lakes and large impoundments. Brush piles, sunken tree tops, stumps, logs, pilings, boat docks, bridges, or shallow, marshy backwater sloughs near willow, alder, bullrush or cattail-edged shores.

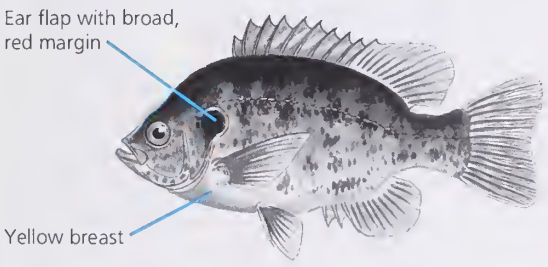
Spawning Habits: Begin congregating in late February just off the shallows of their spawning grounds. In early March to mid-April, they seek out gravel or sandy bottoms close to or amid sunken logs, stumps, underwater brush or other protective structure. In water depths from 2 to 15 feet, they fan out saucer-shaped nests. When the water is about 50° F, the females spawn 20,000 to 60,000 eggs which are guarded by males. They are active feeders throughout their spawning period.

Best Fishing: Buggs Island Lake, Lake Chesdin, Lake Cohoon, Lake Anna, Smith Mountain Lake, Lake Prince, Lake Gaston, Philpott Lake, Brunswick Lake, Lake Brittle, South Holston Reservoir, Nottoway River, South Fork of the Shenandoah River.

Fishing Techniques: Tiny jigs, doll flies, spinner grubs, streamers, small spoon or crankbait imitations of minnows. Small to medium minnows are the best live bait.



REDBREAST SUNFISH



REDEAR SUNFISH

Redbreast Sunfish

Common Names: Yellowbreast sunfish, redbelly, robin, red throats, horneared sunfish.

Identification: Basically olive to brownish-gray along back, merging to blue with a golden cast along sides and a bright orange to yellow underside. Several irregular bluish stripes on head. Identified immediately by the very long and uniformly black opercular flap. Reaches about 8 inches.

Feeding Habits: Insect larvae, snails, tiny clams, small crayfish, small fish and terrestrial insects.

Habitat: Shadows and holes around submerged rocks or near shore along overhanging banks, even strong swirling currents.

Spawning Habits: Late April and early May. Male fans out a nest in coarse sand or gravel near shore in 1 to 4 feet of quiet water. Male guards the nest and keeps the eggs "dusted" of silt.

Best Fishing: Rivers: South Fork Shenandoah, Nottoway, Rapidan, Rappahannock, Maury, Upper James, Cowpasture, Bullpasture.

Fishing Techniques: Small spinnerbaits, spinner bucktails, grubs and tiny crankbaits. Spring and fall are the best times, but they are active throughout the summer as well.

Redear Sunfish

Common Names: Shellcracker.

Identification: Yellow-green or olive, with faint vertical bars and random dark spots. During spawning, the margin of the male's gill cover flap turns bright red. Body is rounded like other sunfish and has a relatively small mouth. Pectoral fins are long and pointed. They grow faster and larger than other sunfish, with one-pounders not uncommon and some often reaching 2 lbs.

Feeding Habits: Redears have grinding teeth that enable them to crush the shells of little snails and small mussels. From this habit they get their common name, shellcracker. They are able to spit out the shell, retaining only the flesh of the shellfish. Redears also feed on nymphs and other aquatic insects.

Habitat: Introduced into Virginia waters, redears prefer cleaner water than other sunfish, and quieter waters that have an abundance of submerged vegetation. They gravitate to stumps, logs, submerged brush and roots and tend to stay in deeper

water than other sunfish, except during spawning. Favorites of pond owners.

Spawning Habits: April spawners and colony nesters when water temperatures reach 70 degrees. They do not spawn into the summer. Nest is a saucer-shaped depression near shore in mud or sand bottom that is formed by the male who guards the eggs until the fry hatch out and reach free-swimming stage. Following spawning, they move back to inhabit water between shoreline cover and deep holes.

Best Fishing: Lakes Cohoon, Meade and Prince, Little Creek, Chickahominy, Robertson, Brunswick County Lake, the Lone Star Lakes, Briery Creek and Gatewood, and the NottowayRiver, along with small private ponds.

Fishing Techniques: Best time to catch redears is in the spring when they come up to the spawning beds. Being bottom feeders, most redears are caught by letting live nymphs, red wigglers or worms lay on the bottom near shore in spring. Artificial jigs and grubs fished near or on the bottom will work as well.

Bluegill

Common Names: Bream, bluegill sunfish, dollardee, sun perch, blueback sunfish and roach.

Identification: Colors are variable. Dark green, olive-green or bluish-black on its back, fading to yellowish-green or silvery. Normally has five to seven dark vertical bars extending down on each side. Lower part of its gill cover and cheek are bluish. "Throat" is yellow to bright orange, gill cover has a black, ear-like flap. Black blotch at the back base of the spiny dorsal.

Feeding Habits: Voracious feeder, usually not too fussy as to what it feeds on. Insects and larvae of all kinds, worms, small crustaceans are among its favored foods.

Habitat: Quiet streams, ponds, lagoons and small to medium-sized lakes. Schools of bluegills gather around drop-offs near the edges of weed beds, around sunken islands off deep points or in creek channels. Look for bluegills in the shade of piers, swimming rafts, tree-shaded shores or points or under or alongside weed beds, such as lily pads, drop-offs close to shore, downed trees, underwater brush piles or shaded shorelines.

Spawning Habits: Bluegills spawn in late spring and early summer as water temperatures reach 70° to 75° F. Males sweep out saucer-shaped nests. The males become quite aggressive in defending the nest and will "hit" out of instinct to protect rather than out of hunger. After spawning they will remain in the shallow waters for awhile as they roam and feed. In early summer as the sun begins to warm these shallows, adults move into deeper, cooler water.

Best Fishing: Lakes: Suffolk, Lone Star, Chickahominy, Robertson, Gatewood Reservoir, and Briery Creek, in addition to a variety of other lakes, rivers and ponds.

Fishing Techniques: A number 8 or 10 hook baited with garden worms, red wigglers, pieces of nightcrawler, grubs, catalpa worms or some other type of insect larva on an ultralight spinning or spincasting outfit, flyrod or small cane pole. Toward evening, when the shallows cool, bluegills move in to feed. Fish shallow with a small, light bobber. Effective artificial lures include shad darts and doll flys worked slowly behind a bobber.

Pumpkinseed Sunfish

Common Names: Pumpkinseed, kiver, pond perch, robin, sunbass or "sunny."

Identification: Dark olive-green on its back with yellowish sides. Spotted with orange, red and blue, and its

Opposite page, above left: *Pumpkinseed; photo by Rob Simpson.*
Left: *Bluegill; photo by Soc Clay.*
This page: *Rock bass; photo by F. Eugene Hester.*

belly is yellow to bright orange. Lightly barred, cheeks and gill covers marked with alternate worm-shaped bands of blue-green and yellow. Bluish-black gill cover flaps are edged in white, yellow, orange, or blue with a small half moon spot of bright red. Average about 4 to 7 inches.

Feeding Habits: Insects, small mollusks and crustaceans. Has rough teeth for crushing shells and will feed off of the bottom with tail up.

Habitat: Sunniest spots, shallow, weedy.

Spawning Habits: In late spring or early summer, fans out dish-shaped nests, usually over a gravel bottom in depths of 6-12 inches near shore. May spawn more than once a year, very prolific and occasionally hybridizes with bluegill and green sunfish.

Best Fishing: Cooperative in summer, though best time to catch them is in April when they move into the shallows, or in May or June when they are spawning.

Fishing Techniques: Easy to catch. Small garden worms, red wigglers, grubs and crickets are good live baits. An ultralight spinning rod and reel is ideal, but even a medium-weight rig works fine with light line, lightly weighted and fitted with a small bobber. Just cast to openings in weed beds,weed bed edges or gravel clearings. Will also hit artificials, wet flies and nymphs, but fish these baits more slowly.

Rock Bass

Common Names: Redeye, goggleye, and rock sunfish.

Identification: Sunfish family. Short robust body and fairly large mouth. Lower jaw protrudes slightly. Back is olive-green with sides a tarnished gold or brassy color. Each scale has a central dark spot. Has wide vertical blotches and a dark spot on its cheek. Average 6 to 8 inches but will reach 12 to 14 inches and 1-1/2 to 2 lbs.

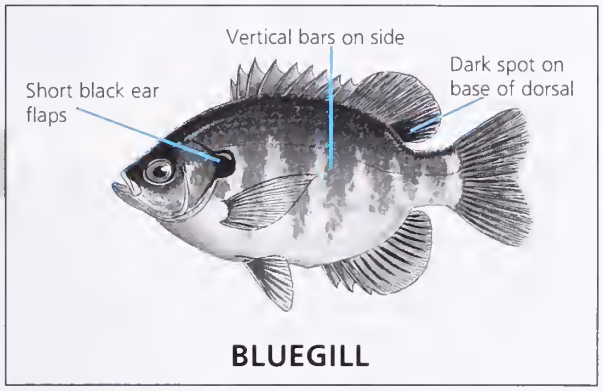
Feeding Habits: Crayfish, aquatic and terrestrial insects and small fishes.

Habitat: Preference for clear flowing streams with rocks, boulders, limestone ledges and logs. Also survives in impoundments formed on the rivers they inhabit.

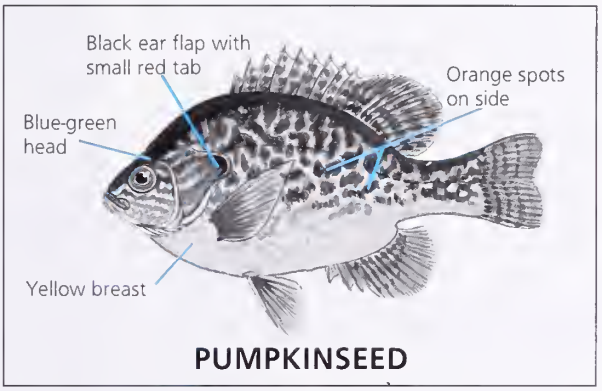
Spawning Habits: Spawns in May or June when water temperatures reach 60° to 70°F. Male forms a bed in the gravel, often using an abandoned nest of other sunfish. Eggs adhere to the gravel and young are guarded by male until they can swim free.

Best Fishing: Rivers: Roanoke, New, Jackson, Maury, James, Bullpasture, Calfpasture, Cowpasture, Buffalo, Shenandoah and Clinch. Lakes: Smith Mountain, Laurel Bed and Hidden Valley.

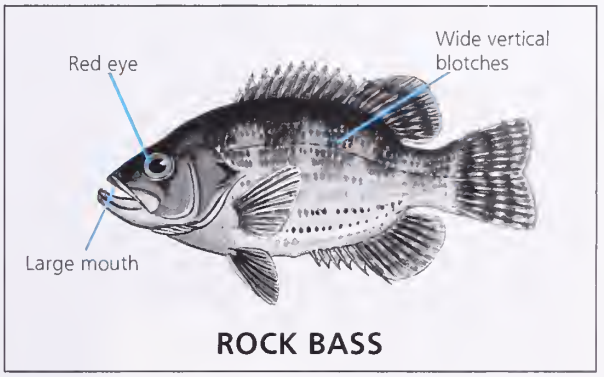
Fishing Techniques: Voracious feeders that readily strike spinners, jigs, small crankbaits and flies. Favored live baits include minnows, crayfish, nightcrawlers and hellgrammites.



BLUEGILL



PUMPKINSEED



ROCK BASS

White Bass

Common Names: Silver bass, sand bass, linesides.

Identification: A member of the temperate "true" basses along with striped bass and white perch. Light greenish back, silver sides, and white below, with 6-8 broken horizontal lines. Front dorsal fin distinctly separated from rear dorsal; lower jaw protrudes beyond upper jaw. Deeper bodied than streamlined striper. Commonly 1/2 to 2 lbs.

Feeding Habits: Thrives on open-water baitfish. Travels in schools in pursuit of concentrations of shad or minnows. Other prey incude crayfish, worms, and insects. Very active feeders during spawning runs.

Habitat: Native to Tennessee River drainage streams of Virginia. Open waters of these moderate to large rivers, and reservoirs with large connecting rivers. Preferred temperatures: 65° to 75°F.

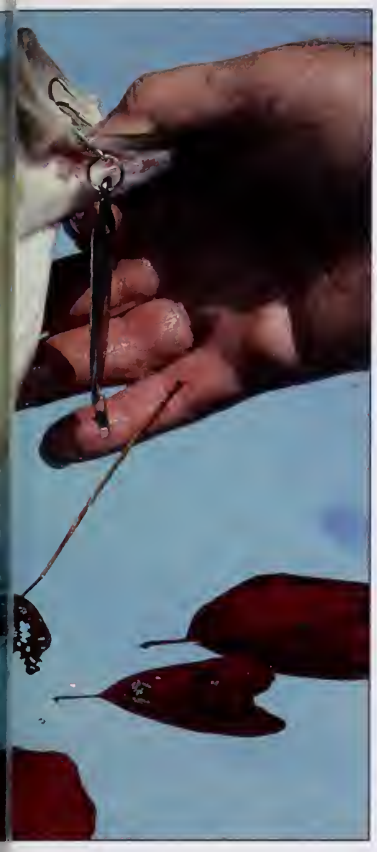
Spawning Habits: Migrates upstream in rivers or tributary rivers of reservoirs. Spawns below dams, riffles, or other upstream barriers over gravel or rubble bottoms, typically from mid-April to late May when temperatures range between 58° to 64°F. No nests are built; eggs are broadcast in current where they are fertilized, sink, and stick to gravel, rocks, or vegetation. Females leave after spawning while males remain for awhile before moving back downstream.

Best Fishing: Lakes: Buggs Island, Claytor, South Holston, Smith Mountain, and Leesville. Rivers: New, and South Holston and Dan (during spawning runs).

Fishing Techniques: Ultralight or light action spincasting, 4 to 8 pound test line. All types of white jigs, small silver spoons, small spinners, vibrating shad imitation lures, and live

Above: *photo by Soc Clay.* ***Below:*** *photo by Doug Stamm.*

The hybrid striped bass ***(top)*** *is a cross between a white bass* ***(right)*** *and a striped bass* ***(opposite page, bottom)****. It is sometimes called "wiper," "white rock," or "swiper". The lines along the body of the hybrid are well-defined and normally broken up. As they grow larger, they develop the distinctive white bass "hump" in their back. Hybrid striped bass have been stocked in Lakes Whitehurst, Smith, Chesdin, Nelson, Rural Retreat, and Occoquan Reservoir.*



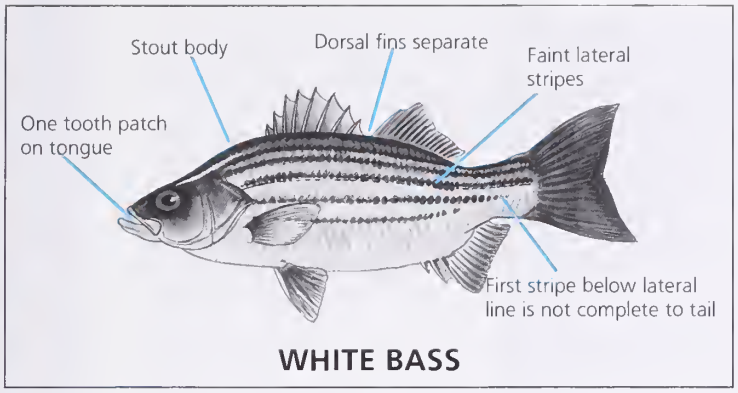
minnows. Easily caught during spawning run. Also caught below tailraces of dams and by jump fishing open waters where schools are roaming.

Striped Bass

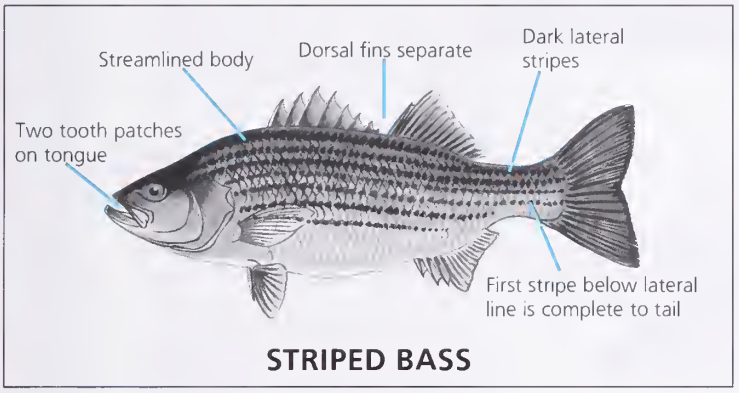
Common Names: Striper, rockfish.

Identification: Streamlined, elongate body; coloration shades from dark olive above through silvery sides to a white belly. Horizontal black stripes originate behind head and extend to tail, more prominent than on white bass. Large fish, 10 to 15 lbs. common; fish in 30+ lb. class landed each season.

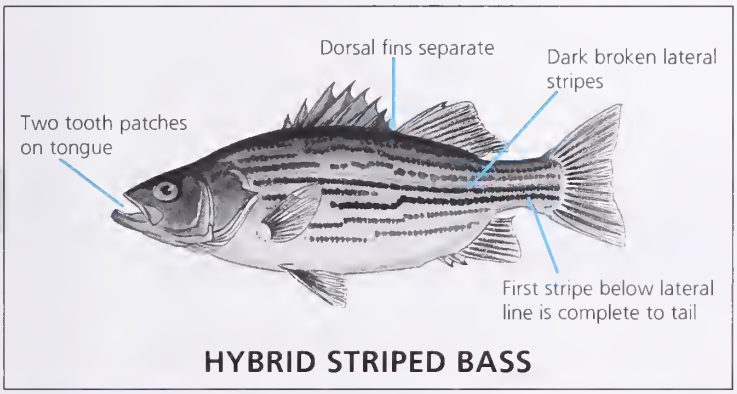
Feeding Habits: Like other temperate bass, they travel in schools feeding on open-water baitfish, such as gizzard shad. They also eat a variety of insects and bottom organisms. Feeding slows as temperatures drop below 50° F.



WHITE BASS



STRIPED BASS



HYBRID STRIPED BASS

photo by Rob and Melissa Simpson

Habitat: Stripers are anadromous, open-water fish, entering freshwater streams to spawn. However, this species has adapted well to freshwater and an extensive stocking program by the Virginia Department of Game and Inland Fisheries has established excellent landlocked striper populations in several lakes. Preferred temperature range is 65° to 75°F.

Spawning Habits: Spring migrations up tributary streams at water temperatures from 55° to 60°F, often below large dams or upstream obstructions. Semi-bouyant eggs are deposited in current. Moving water needed to keep eggs afloat until hatching.

Best Fishing: Lakes: Smith Mountain, Anna, Buggs Island, Claytor, Gaston, Leesville, Prince, and Western Branch.

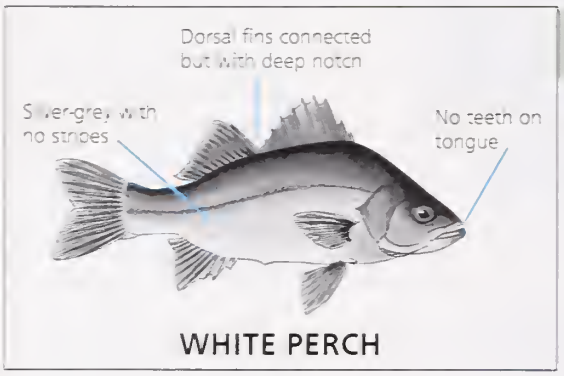
Fishing Techniques: Heavy baitcasting or spincasting reels and stiff 6 to 7-1/2 foot rods, 10 to 25-pound test line. Large jigs, spoons, minnow imitation plugs, and live batifish; casting to surface "jumps," drift fishing, or trolling.

White Perch

Common Names: Bluenose perch, stiffback, silver perch, sea perch.

Identification: Not really a perch, this fish is a member of the temperate bass family which includes striped bass, white bass and yellow bass. It averages 8 to 10 inches, though 1/2 lb. fish

White perch, photo by Rob Simpson.



are not uncommon, and occasionally they'll reach 2 lbs. Silver-gray in color, fading to silvery white with no longitudinal lines, the fish has a deep notch between the spiny dorsal and soft-rayed dorsal.

Feeding Habits: Mummichogs, mud minnows and other small fish, crustaceans, insect larvae and grass shrimp. They are school fish throughout the seasons, tending to spend daylight hours in deep water, moving to the shallows at dusk to feed.

Habitat: Brackish water; tidal streams and impoundments of tidal streams.

Spawning Habits: March through early May at water temperatures of 50° to 60°, running up rivers to spawn over gravel or rocky areas where the eggs are broadcast randomly. Lake-locked fish will spawn over rocky shoals or gravel bars.

Best Fishing: Tidal rivers and most of their tributary creeks, including the Pamunkey, James, Rappahannock, Chickahominy, Mattaponi, North Landing, Northwest and Potomac. Other waters include Back Bay, Western Branch, Lake Gaston, Buggs Island, Motts Run, Lake Anna, Occoquan, and Lee Hall.

Fishing Techniques: Live bait, particularly minnows, artificials, small spinnerbaits and jigs. Fish near structure: old wharves, pilings, logs, etc. on a falling tide which moves minnows and shrimp out of shoreline cover. Often found by trolling or drifting.

Walleye

Common Names: walleyed pike, jack, doré

Identification: Largest member of the perch family. Grows up to 21 inches and between three and four pounds by age three. Typically dark olive-brown or olive-green above, sides that are flecked and mottled with green and gold. Dark blotch at the rear base of spiny dorsal fin separated from soft-rayed dorsal fin. A similar species, the sauger, found mainly in far southwest Virginia, has a spotted dorsal fin.

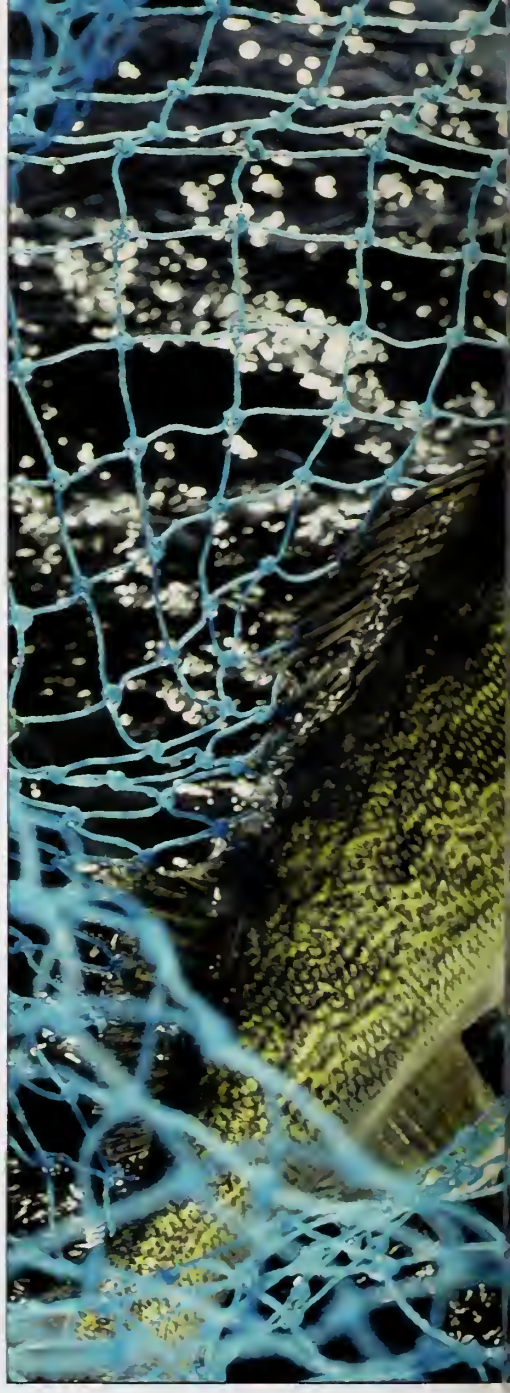
Feeding Habits: Avoids bright light, choosing to lie in deep or shaded cover during daylight hours. Moves onto bars and reefs near the shallows at night to feed on small fish, leeches, insect larvae and crayfish. Also found in some shallow lakes that are turbid, where they tend to be active on days that are overcast.

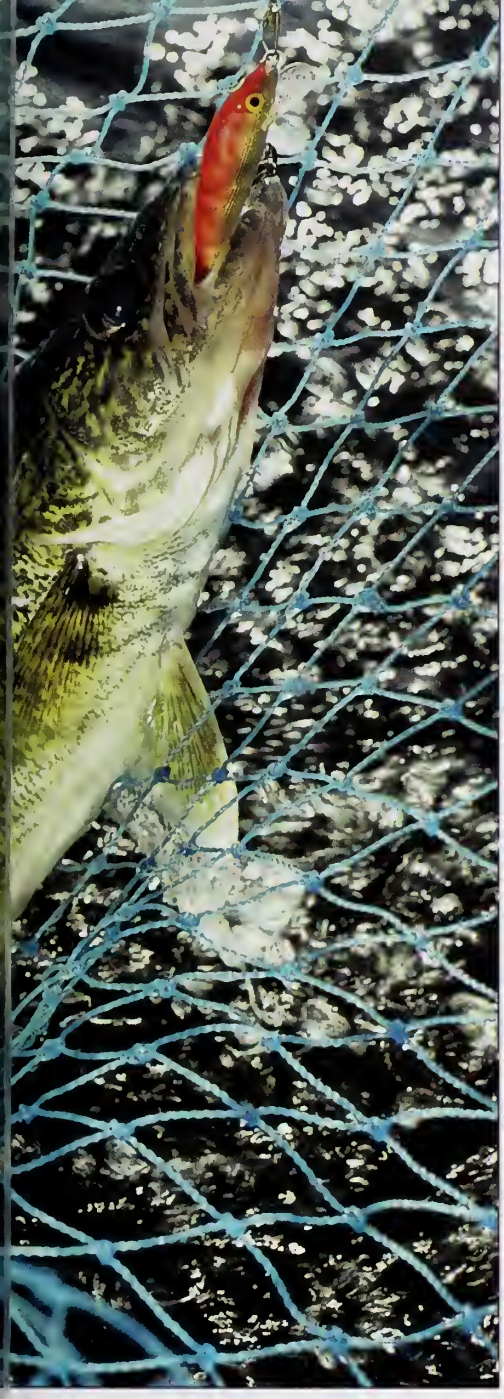
Habitat: Native to the Clinch River in Virginia but is now found almost statewide. Prefer waters that are cool with temperatures ranging from 60-70°F. Orients next to ledges, large rocks, underwater islands, large logs, edges of large weed beds and along old river bed channels.

Spawning Habits: Spawns as early as late-February in Virginia. Normally runs rivers to spawn but they will spawn in lakes over rocky or gravel shoals, or amid clean, low-growing emergent vegetation. Eggs are non-adhesive and unattended, hatching in about two weeks.

Best Fishing: Lakes: Gaston (especially below Kerr Dam), Philpott, Flannagan, South Holston, Smith Mountain, Anna, Burke, Buggs Island, Claytor, Abel, Whitehurst, Orange and Brittle. Rivers: Staunton, New, Nottoway, Clinch, Powell, South Holston, Appomattox and James.

Fishing Techniques: Deep-jigging with leadhead jigs and grubs, bucktails and Hopkins spoons. Minnows,





worms, spinners and deep-running crankbaits also work well. Slow retrieves yield better results as walleye move slightly slower than other fish.

Yellow Perch

Common Names: ringed perch, raccoon perch, yellow ned, green perch, striped perch, American perch.

Identification: Member of the family Percidae which includes walleye, sauger and numerous darters. Varies in color according to the water. Generally, the back is olive, sides are green to golden yellow with six to eight dusky bars, belly is silvery. Dorsal fins have a distinctive dusky blotch. Ventral and anal fins are yellow to orange, turning to bright red-orange on breeding males. Average 6 to 8 inches, commonly reach 14 to 15 inches and 1-1/2 to 2 lbs.

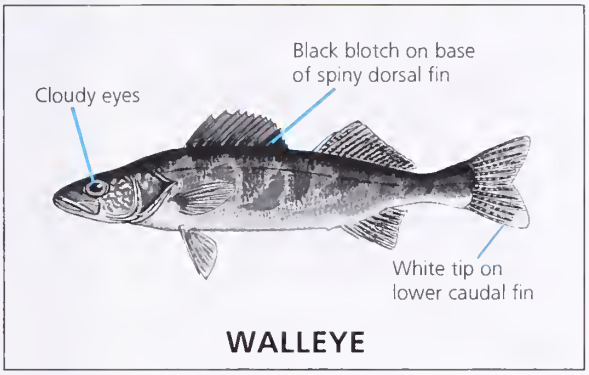
Feeding Habits: Small fish feed on plankton, turning to aquatic insects, then small fish as they grow larger. Occasionally they'll feed on crayfish, snails and other invertebrates. Adults are small fish eaters and they will eat eggs of other fish.

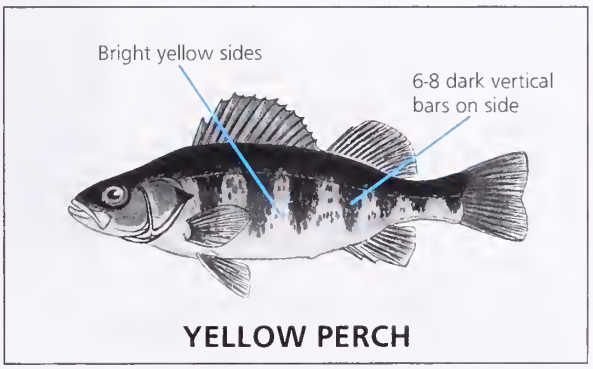
Habitat: Ponds, medium-sized lakes, large reservoirs, slow-moving streams, sluggish portions of large rivers and in brackish tidal rivers. Tends not to roam except during the spawning run. Prefers clean, cool water. Seeks out deepest waters during summer and is often found over sandy, rocky or marl bottoms and over low-growing weeds.

Spawning Habits: Runs in schools up tributaries to spawn in late Feburary or early March when water temperatures reach 45 to 50°F. Also seeks out shallow shoals in lakes where water movement will aerate eggs. No nest is built. Females release eggs in long gelatinous "ribbons" or "streamers" which are fertilized as they are released. Spawning activity takes place at night.

Best Fishing: Brackish water tributaries of the Chesapeake Bay and Potomac River. Top waters include the Machdoc, Maddow, Aquia and Occoquan Creeks, the Potomac, Mattaponi, Rappahannock, Chickahominy, Nottoway and New Rivers, and the reservoirs of Western Branch, Prince, Burnt Mills, Waller Mill, Little Creek, and Claytor.

Fishing Techniques: Ready feeders, cautious biters, slow movers. Locate schools of fish and use deep jigging methods. Small minnows are best overall bait. Other popular baits include mummichogs, rock flies, mayfly nymphs, waxworms, meal worms, fish eyes, chunks of cut bait, pork rind as well as artificial lures tipped with some of the above, including small spoons, spoon hooks, jigs, spinners, bucktails and streamers.





*Yellow perch (**top**; photo by Rob Simpson) and walleye (**left**; photo by Doug Stamm) are in the same family, although walleye are native to the Clinch River in southwest Virginia, and yellow perch are fish of the brackish water tributaries of the Chesapeake Bay and Potomac River.*

Northern Pike

Common Names: Great northern, pike, pickerel, jackfish.

Identification: Long, lean body, generally olive or dusky-green to a light-olive or gray-green on top, fading to a lighter green and yellow, then to white on its belly. Light yellowish, bean-shaped spots the length of its body. Strongly toothed jaws, with teeth arranged in rows, plus rows of teeth located on tongue and palate.

Feeding Habits: Eats other fish, including minnows of all sizes, suckers, and shad. Also feeds on frogs, mice, snakes, worms, insects, muskrats and ducklings.

Habitat: Introduced into Virginia, they are found in shallows in spring and fall, over and around weed beds and bars. In summer they seek out deeper waters near drop-offs, but seldom below 35 feet. May move up into creek arms or underground springs where cooler moving water is flowing.

Spawning Habits: Spawns in early spring when it's still cold. Females broadcast adhesive eggs which are fertilized by males as they drop to the bottom vegetation. Eggs are deserted, hatching in two to three weeks. Fry are very vulnerable to predators.

Best Fishing: Harwoods Mill Pond in York, Lake Kilby in Suffolk, Lake Orange in Orange, Newport News City Reservoir, and Occoquan Reservoir in Fairfax and Prince William Counties.

Fishing Techniques: Live bait or by casting or trolling large spoons, spinner bucktails and crankbaits.

Chain Pickerel

Common Names: Chainsides, jackpike, pike, snake.

Identification: So-named for chain-like markings on its sides. Also has a black vertical mark under its eye, and its fins are normally unmarked. Averages 1-1/2 to 3 lbs, and tends to be a little stockier than its cousin the northern pike.

Feeding Habits: Feeds on small fish and insects, worms, snakes, frogs and small mammals. Like all pickerel, they are solitary fish, lurking hidden in the weeds, waiting for prey to swim or drift by. They will feed day or night, year-round, but most feeding is done in early morning or early evening. During cooler periods they roam and search, but tend to be territorial and stick to a relatively small area.

Habitat: Common in rivers and streams, they are also found in Virginia reservoirs. Even in the smallest of creeks, the chain pickerel is found. Prefers shallow, weedy waters.

Spawning Habits: They spawn in early spring, when water temperatures are from 47-52 degrees, broad-

casting eggs over vegetation in water a foot or two deep and leaving them unattended.

Best Fishing: Nottoway and Blackwater Rivers, Chickahominy River and Reservoir, Mattaponi River, and Lakes Gaston, Western Branch, Diascund, Burnt Mills, Prince, Anna, Cohoon, Little Creek, Lee Hall, Kilby, and any number of other lakes, rivers and ponds.

Fishing Techniques: Best time to fish is October to March. Most active when water temperatures are 55 to 70 degrees. Cool fall temperatures increase feeding activity. Stream pickerel get active from late summer to December, while those in large rivers and lakes come alive from mid-October through February. Spinners, spoons, bucktails, jigs, pork rind baits, and a variety of crankbaits will take pickerel. Fish the edges of weed beds, lily pad beds, sunken brush or tree stumps.

Above: Muskellunge; photo by Soc Clay.
***Opposite page:** Northern pike **(left)**; photo by Doug Stamm. Chain pickerel **(bottom left)**; photo by Doug Stamm.*

Muskellunge

Common Names: Musky, 'lunge, great pike.

Identification: Largest member of the pike family. Normally olive to dark gray on its back with yellowish to grayish sides. Its sides have faint vertical bars, spots and blotches.

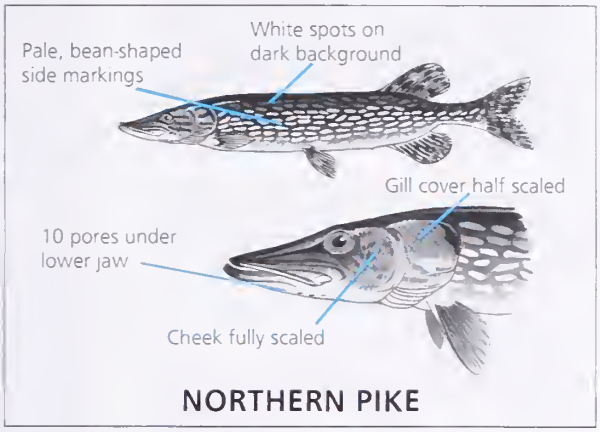
Feeding Habits: Muskies eat mainly other fishes, especially soft-rayed species such as suckers, shad and carp, but also frogs, mice, muskrats and ducklings.

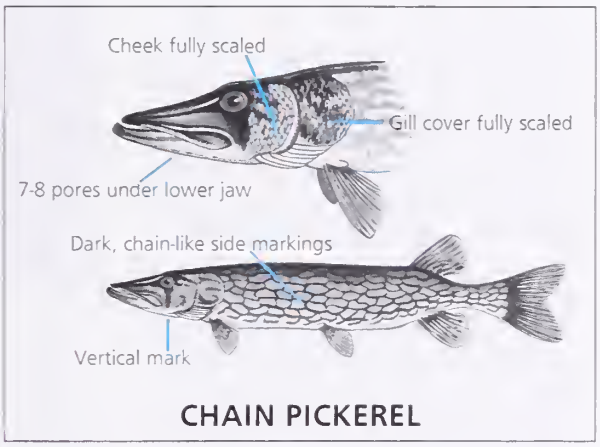
Habitat: Not native to Virginia, but introduced into the New River, the Clinch and Holston Rivers, the James River and Smith Mountain Lake. Muskies prefer cool, clear lakes with abundant vegetation or the quiet reaches of rivers.

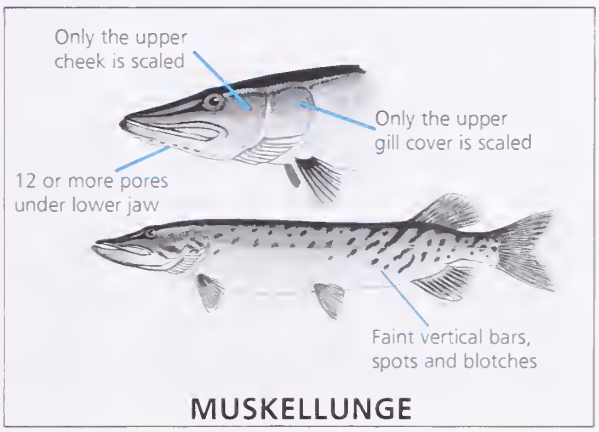
Spawning Habits: Muskies spawn in early spring at temperatures of 49° to 59° F. The eggs are fertilized as they are discharged over muck or marl bottoms in the weedy shallows of bays and coves. Fry suffer incredible losses from other fish, large carnivorous insect larvae and water beetles. In Virginia, most musky populations are maintained by stocking.

Best Fishing: The James, Clinch and New Rivers, and Smith Mountain Lake are some of the better musky waters in the state. However, Claytor Lake, Rural Retreat Lake, Leesville Reservoir, the Shenandoah River, Burke Lake in Fairfax, and Western Branch Reservoir are also excellent.

Fishing Techniques: Most muskies taken in Smith Mountain are taken by trolling in deep water. However, early in the season many are caught by trolling across shallow points. River fishermen use small boats with electric or small motors to float larger pools and fish shoreline snags and submerged brush. Use heavy bait casting rods and reels with 15 to 30 lb test line and larger plugs, spinners and spoons.







Flathead Catfish

Common Names: Mud cat, shovelhead cat, yellow cat.

Identification: Broadly flattened head with a lower jaw that projects beyond the upper jaw. Tail only slightly notched and adipose fin is relatively large. Body is yellowish or cream-colored, with black, dark brown or olive-brown mottling on back and sides, fading to white or yellow. Younger fish have darker, bolder markings and upper tip of tails have white triangular patches.

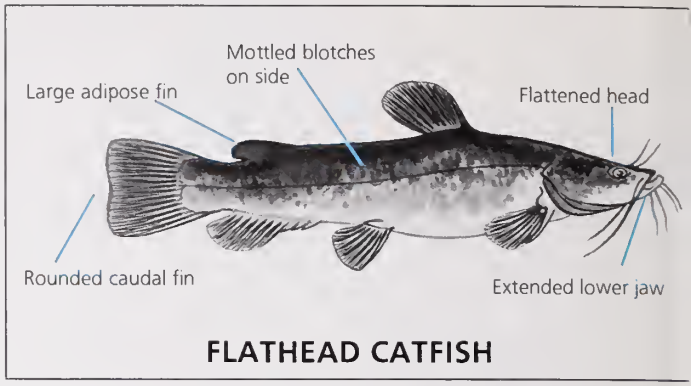
Feeding Habits: More solitary than other catfish. They feed at night on other fish, crustaceans, mollusks, insect larvae and terrestrial creatures washed into the river. Sometimes feeding near the surface, they occupy shallower water than most cats .

Habitat: Found in large, turbid rivers, inhabiting deep, slow stretches near strong currents. Prefers structure like submerged logs, brush, riprap and underwater piles of debris.

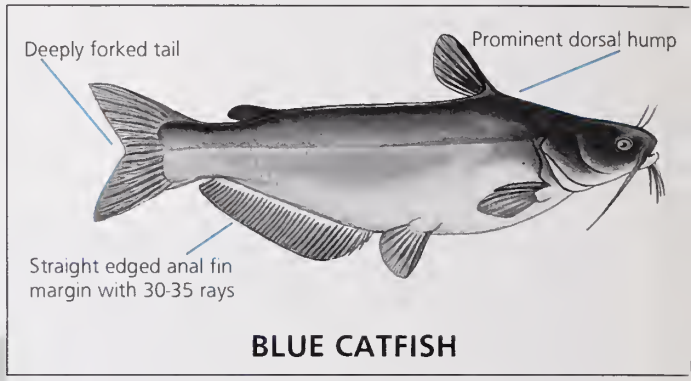
Spawning Habits: Summer, when water temperatures reach 72° to 84° F. Eggs are laid in depressions scooped out in bottom, in hollow logs or in holes along bank. Fry gather in compact schools guarded by male. As they grow older, they become more solitary.

Best Fishing: James, New, Staunton Rivers; Occoquan Creek and Reservoir, Claytor Lake and Buggs Island. Also stocked in Lakes Whitehurst and Brittle.

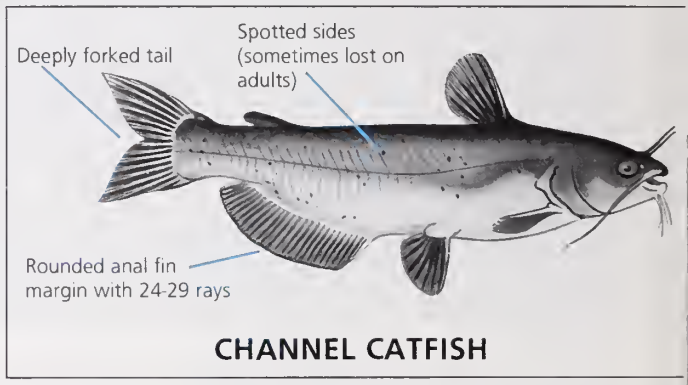
Fishing Techniques: Use live foods, since flatheads aren't as easily attracted to the normally used catfish baits, although chicken entrails, nightcrawlers and minnows work well. Flatheads are usually caught on the bottom in deep pools or in the tailraces below dams.



FLATHEAD CATFISH



BLUE CATFISH



CHANNEL CATFISH

This page, top left: Flathead catfish.
***Opposite page:** Channel catfish **(above right)**. Blue catfish **(right)**; photos by Soc Clay.*

Blue Catfish

Common Names: Fork-tailed cat, humpback, humpback blue, great blue cat, chucklehead.

Identification: Heavy-bodied with wide head and high spot forward of center near head called a dorsal hump. Upper jaw projects well beyond lower. Bluish-gray body above, fading to white on sides and belly. No spots, and tail is deeply forked. Smaller blue cats are often confused with channel cats, and the best way to distinguish between the two is by the 30-35 rays on the blue cat's anal fin with its straight outer margin.

Feeding Habits: Omnivorous, but feeds naturally on fish, crayfish, and mollusks, and scavenges on dead or dying aquatic and terrestrial animal matter. Sense of taste and smell are more important than sight in obtaining food, and whiskers are used for this purpose.

Habitat: Stocked in Rappahannock and James Rivers as well as in a few lakes. Also found in the Appomattox River. They frequent places with sandy bottoms and moderate currents, and tend to avoid silty areas.

Spawning Habits: Spawn in late spring and early summer, when water temperatures reach the 70-75° F range. Eggs are laid in masses into nests formed under logs, in brush or debris or along the river bank. Young school up.

Best Fishing: Rivers: Rappahan-

nock, James and Appomattox.

Fishing Techniques: March through May are best, but they are caught almost year-round. Use heavy tackle with cut bait, live herring, shad, clam snouts, shrimp, or peeler crab.

Channel Catfish

Common Names: Spotted cat, speckled cat, squealer, willow cat, fiddler, silver cat and forktailed cat.

Identification: Deeply forked tail. Upper jaw is longer than and overlaps the lower, and its smooth-skinned body is usually spotted. Small dorsal fin with stiff spine standing high on back. It has eight barbels, or feelers, four located under the lower jaw, two on top and one at each end of the upper jaw. Barbels contain taste buds which help it find food. Varies in color, though generally dark brownish to slate-gray on top, fading to light brownish-gray on sides.

Feeding Habits: A variety of insects, vegetation, crustaceans, mollusks, fish eggs, fish and carrion of many types. Wandering nocturnal feeders, they spend daylight hours in deep holes around brush piles or in and along river channels.

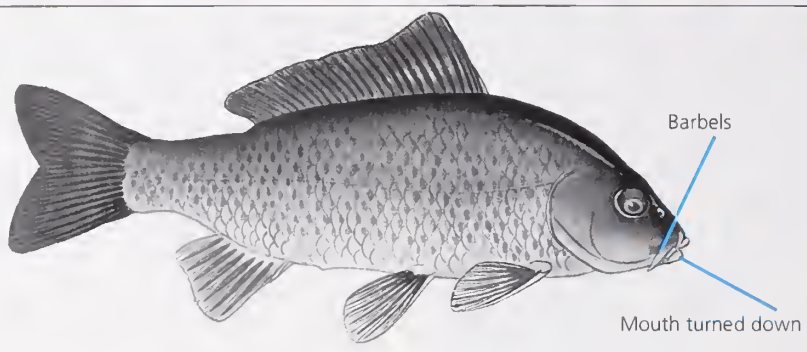
Habitat: Lakes and larger rivers with cleaner bottoms of sand, gravel or stones, seldom in dense weedy areas, but also over mudflats. Also lives in the deeper, slower pools of swift, clear-running streams. In large reservoirs, often found below dams where they feed on food swept over them.

Spawning Habits: From late May through July when water temperatures reach the mid-70s. Rocky ledges, undercut banks, hollow logs and other underwater structure are spots generally chosen to lay their pea-sized eggs. Male guards the nest and eggs hatch in seven to 10 days. Fry travel in tight-packed schools, guarded by male.

Best Fishing: Best rivers are: James, Potomac, Rappahannock, Appomattox, Chickahominy, Pamunkey, New, South Fork of the Shenandoah, Dan and North Landing. Best lakes include: Buggs Island, South Holston Reservoir, Claytor, Pelham Reservoir, Meade, Prince, Gordon, Nelson, Burke, Orange, Burton, and Back Bay.

Fishing Techniques: Rod and reel anglers catch them on clam snouts, peeler crabs, large minnows, night crawlers, cut herring or shad, chicken livers or entrails and a variety of stink or dough baits. They take a variety of artificials as well, including crankbaits, jigs and spinners.

Carp; photo by Rob Simpson.



CARP

Carp

Common Names: German carp, waterhog, mud hog, leatherback.

Identification: Olive green on back, shading to a yellowish-gold on belly, with yellowish to reddish fins. Small, leathery mouths supported by tough cartilage and pharyngeal teeth in their throats for crushing shells and other foods.

Feeding Habits: Carp dig down into the bottom or amid vegetation, sucking up mouthfuls of silt of debris, somehow straining out food items such as snails, mussels, vegetation, worms, aquatic larvae and organic debris through their gills rakers and spitting out mud and other non-food particles.

Habitat: Prefers clean water, but capable of tolerating and dominating waters it degrades. Likes quiet waters with sandy or muddy bottoms where it browses for food.

Spawning Habits: Spawns in shallow bays, tributary headwaters, marshy river sloughs and marshes. Broadcasts eggs in late April and early May over and amid aquatic vegetation.

Best Fishing: Claytor Lake, Rappahannock River, Potomac River, Pamunkey River.

Fishing Techniques: Carp have acute senses of hearing, smell and taste. They will bite in hot summer when other fish are not very active. If the water is clear, carp are skittish. Clouds of mud stirred up by carp means they are feeding, as do moving lines of bubbles rising from the disturbed bottom. Carp often go on feeding sprees after a rain. Sometimes it pays to chum an area with kernel corn, oatmeal, cooked vegetables or similar materials. Baits include green corn (fresh from the ear); ripe corn that is developed and starchy and holds to the hook better; marshmallows; cheese mixed with cotton to keep it on the hook; worms; bread kneaded into doughy balls; canned corn or peas—even soap! Baits must lie quietly on unobstructed bottom. Tackle is usually a spinning or casting rod of at least 6 feet with some backbone. Reels should be fitted with at least 100 yards of 12-pound test line. Hooks from #2 down to #10 are favored, and a sliding sinker should be used.

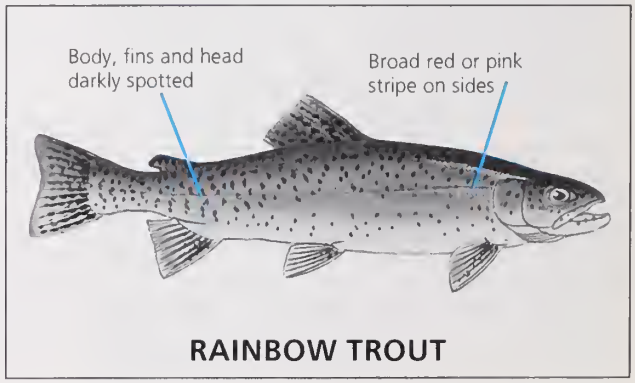
Rainbow Trout

Common Names: Rainbow, silversides.

Identification: The variety of rainbows has resulted in a variety of colors, hues and markings. Normally the back is olive-green with a silvery cast on its sides fading to a silvery white belly. A pinkish or light rosy red band extends from its cheek to near its tail. Normally, they are well-spotted with black spots, but vary from large spots, and tiny specks to no markings at all.

Feeding Habits: Variety of aquatic and terrestrial life. Large rainbows prefer small fish, but their main diet is invertebrates.

Habitat: Originally native to the western slope of the Rockies. Successfully introduced into Eastern



RAINBOW TROUT

Rainbow trout; photo by Doug Stamm.

streams including those in Virginia. Most Virginia rainbows are stream fish.

Spawning Habits: Majority of rainbows in Virginia are stocked fish. When spawning occurs it is at the lower ends of pools or in riffles where the female digs out a spawning bed or "redd."

Best Fishing: Well established in the southwestern region of the state. Lake Moomaw, Philpott Reservoir, Smith River, Elk Creek, Dan River, Crooked Creek, Roanoke River, Little Reed Island Creek, Jackson River and many other streams on both sides of the Blue Ridge.

Fishing Techniques: Fast flowing, larger streams are best, but it can thrive in lakes too where it grows faster and larger. Hits dry flies, wet flies, streamers, nymphs, small spinners and spinner bucktails, spoons, as well as worms, live nymphs, minnows salmon eggs. Hatchery trout can be caught on kernel corn, and bright-colored marshmallows which apparently resemble trout or salmon eggs—a natural food.

This page, above: Brown trout; photo by Doug Stamm. ***Opposite page:*** Brook trout; photo by Doug Stamm.

Brown Trout

Common Names: English brown trout, German brown, European trout.

Identification: Colors vary widely. Natural, wild browns are olive-brown or bronze-green on the back, lighter on the sides, brilliant yellow gold on their underbody, with yellowish-green unspotted fins. Have numerous black or dark brown spots. Sides are sprinkled with red spots, encircled by light bluish rings. Hatchery-reared trout tend to be brown above and silvery-sided, with a light, yellowish underbody, and black and red spots surrounded by a lighter "halo."

Feeding Habits: Aquatic and terrestrial insects, mollusks, small fish, crayfish, salamanders, frogs, even small mammals or birds. Fish and crayfish are the main diet of larger browns.

Habitat: Usually in larger waters than brookies with plenty of rock structure, submerged logs and overhanging banks.

Spawning Habits: Female fans out up to four different nests. They spawn in tributary streams or shallow shoal waters.

Best Fishing: Smith River below

Philpott Reservoir, Little River, Mossy Creek, Potts Creek, Back Creek, Jackson River and a wide array of others, plus Lake Moomaw and Philpott Reservoir.

Fishing Techniques: Will rise to dry flies as well as hitting wet flies, streamers and nymphs. Worms, live nymphs, minnows and salmon eggs are good, too. Brown trout tend to be bigger "meat eaters" in that they'll take larger live baits more readily and will hit spinners, spinner bucktail combinations and small plugs and spoons more readily. Live baits and wet flies are normally fished downstream—dry flies upstream.

Brook Trout

Common Names: Native trout, brookie, mountain trout.

Identification: Most colorful of our trout. Back is a dark olive-green with light wavy or wormy markings. Sides are lighter, sometimes with a bluish cast, yellowish spots and red spots with a light blue halo. Belly is white with bright orange fins. Fins have outer edges of white with a black line separating it from the orange. Ten to 16 inches and 1 to 2 lbs. are trophies, but here they seldom live beyond 12 inches in length.

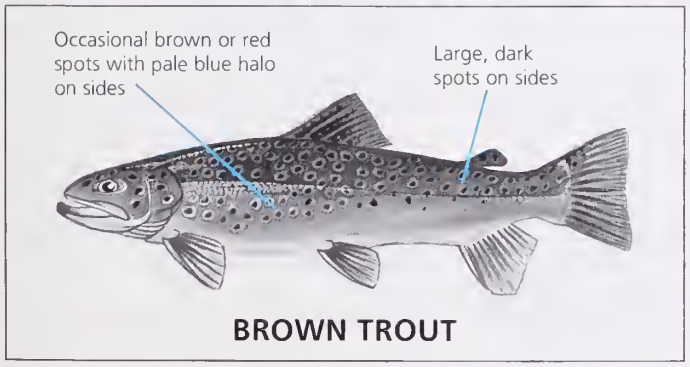
Feeding Habits: Feed mainly on insect larvae for most of their life, caddis and mayfly nymphs, but also on small fish and crayfish. Tend to be mostly daylight feeders.

Habitat: Colder, cleaner waters and smaller creeks and beaver ponds. Does best in water temperatures of 68°F or less.

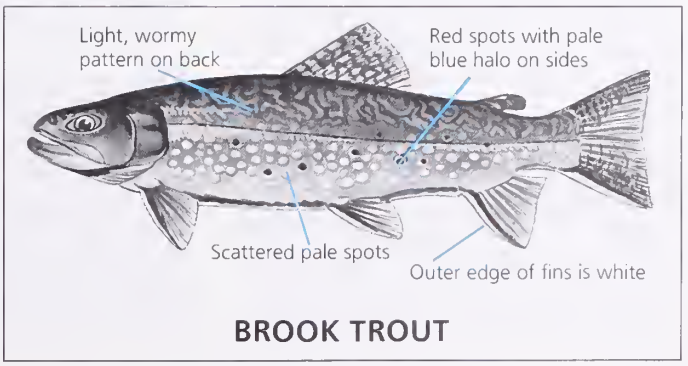
Spawning Habits: October and November in the headwaters of small streams, usually the tail of a pool. Female excavates a spot in the gravel and releases her eggs, the male releases milt over them. The female then fans gravel over the eggs to protect them.

Best Fishing: Nearly 200 streams or portions of streams contain brook trout. Many of the streams and ponds in Shenandoah National Park, George Washington National Forest and the Jefferson National Forest have native brookies. Among the better stocked brook trout streams are Jennings, Potts, Crooked, Big Stoney, Passage and Stoney Creeks, and the Jackson River.

Fishing Techniques: For the purist, dry flies,wet flies, streamers and nymphs are used—nymphs early in the season—dry flies when natural insect hatches take place. Live bait anglers use garden worms and caddisfly, mayfly or stonefly nymphs, and they are best early in the year which is the time nymphs are normally available. In deep pools small minnows may be effective year-round.



BROWN TROUT



BROOK TROUT

Free Clean Water and Wetlands Brochures Available from IWLA

Anglers, hunters and other recreationists concerned about clean water and wetland habitat can learn more about protecting these vital resources by obtaining the Izaak Walton League of America's new brochures, "A Citizen's Guide to the Clean Water Act" and "Saving Wetlands: Why Should I Care?"

Up to 99 copies of the brochures are available free to individuals or groups. Orders of 100 copies or more are $5 per 100. Send requests and a SASE for single copies to: IWLA, 1401 Wilson Blvd., Level B, Arlington, VA 22201.

Turtle Excluder Devices Helping Sea Turtles

Contrary to dire predictions of economic doom by opponents, the use of turtle excluder devices (TEDs) has not had a harmful impact on the shrimp industry and has benefitted threatened and endangered sea turtles, according to a National Wildlife Federation, Center for Marine Conservation and Environmental Defense Fund report released recently.

Five species of threatened and endangered sea turtles are found in Southeastern U.S. waters. In Virginia, juvenile loggerhead, Kemp's ridley, leatherback and green turtles all use the Chesapeake Bay as a nursery ground during the summer months.

The National Academy of Sciences identified shrimp trawling as the single greatest cause of human-induced mortality of sea turtles, since the turtles,unable to escape the shrimp nets, drown in them. An estimated 55,000 threatened and endangered sea turtles drowned annually in shrimp nets without TEDs.

By 1980, the National Marine Fisheries Service unveiled the TED solution—a device inserted in shrimp nets with an opening to free sea turtles caught in the nets. After years of delay, TED requirements were finally implemented in 1989. In 1990 and 1991, shrimp catches in the Gulf of Mexico were actually higher than in the previous three years when TEDs were not required.

For copies of the report entitled "The TED Experience: Claims and Reality," write to: National Wildlife Federation, Attn: Fisheries and Wildlife Division, 1400 16th Street, Washington, D.C. 20036-2266.

Summer Reading

We've received quite a summer reading list for the young and old from our readers. Because we don't have the space to list them all in this issue, look for more "favorites" in upcoming magazines. Feel free to keep the list growing by writing to us with your favorite books on the outdoors. But for now, dive into the cherished favorites below:

A Family Goes Hunting by Dorothy H. Patent (Clarion Books, Merlin, Oregon 1991). A "marvelous children's book" on the fifth grade reading level with numerous black and white illustrations that cover the entire hunting process.
Recommended by Sammye Foster, Chesterfield County.

Brother Eagle, Sister Sky, A message by Chief Seattle, paintings by Susan Jeffers (Dial Books, N.Y., 1991)

Chief Seattle's famous words to the President of the United States in 1852 were originally transcribed by Dr. Henry A. Smith who knew him well, and they were rewritten more than once in this century. Here, Susan Jeffers adapts Chief Seattle's inspiring words about man's connection to the land in her beautiful illustrations. Although marketed as a children's book, it also would make a beautiful coffee table book. Recommended by Sammye Foster, Chesterfield County.

The Crow and the Weasel, by Barry Lopez, illustrations by Tom Pohrt (North Point Press, San Francisco, 1990).

A vividly illustrated story of great adventure for children, this fable is also about our spiritual relationship to the landscape, respect for traditions different from our own, and our human obligations to one another. This is a beautiful, moving book, to be read over and over again.
Recommended by Brenda Morgan, Goochland County.

The Old Man and the Boy, by Robert Ruark (Henry Holt & Co., N.Y., 1957).
Recommended by Stan Griscavage of King George and Brian Berger of Henrico County.

Says Griscavage: "The absolutely best 'outdoor' book I've read in the past 40 years. It's a book about friendship and love; and includes short stories dealing with philosophy, humor, sadness, ethics, wildlife management, growing up, growing old, hunter safety, etc."

Adds Berger: "All of Robert Ruark's books, particularly *The Old Man and The Boy, The Honey Badger* and *The Old Man's Boy Grows Older* are great reading."

The Treasury of Outdoor Life, A Compedium of 50 years of the best of Outdoor Life magazine, edited by William E. Rae (Outdoor Life Publishing Company, Harper and Rowe, N.Y. 1975).
Recommended by Brian Berger, Henrico County.

Trashing the Planet, by Dr. Dixy Lee

Ray (Regnery Gateway, Washington, D.C., 1990).
Recommended by Charlie Cox, Glen Allen.

Says Cox: "The title is misleading as this is not a typical hysteria-promoting, global warming supporting environmentalist book. It is simply the best explanation of environmental questions I have read. It is well-footnoted and thoroughly backed up with facts. It does an especially good job of explaining how the public is often duped by irresponsible reporting by the media."

The National Parks Fishing Guide, by Robert Gartner (Globe Pequot Press, Chester, CT, 1989).
Recommended by MaryAnn Butler.

Says Butler: "It's a comprehensive guide detailing fishing opportunities in 125 national parks, including five in Virginia. It's a great resource book and a 'good read' during the winter months, too!"

Stan Balducci of Mechanicsville sent us his top ten list of good reading. Says Balducci: "I'm a wildlife gardener and would like to share with other outdoor buffs the following books:"
A Field Guide to Your Own Back Yard, by John H. Mitchell, Norton, N.Y., 1986.
The Education of a Gardener, by Russell Page, Random House, N.Y., 1985.
Life and Death of the Salt Marsh, by John and Mildred Teal, Ballantine Books, N.Y., 1983.
The Web of Life, by John H. Storer, NAL-Dutton, N.Y., 1956.
How Plants Get Their Names, by Liberty H. Bailey, Dover, N.Y. ,1933.
The Organic Gardener, by Catharine Osgood Foster, Random House, N.Y., 1972.
Insects, by Ross E. Hutchins, 1972 (not in print).
Let It Rot! A Home Gardener's Guide to Composting, by Stu Campbell, Storey Comm. Inc., Pownal, VT, 1975.
Landscape Design: A Practical Approach, by Leroy Hannebaum, Prentice Hall, N.Y., 1989
The Principles of Gardening, by Hugh Johnson, Simon and Schuster Trade, N.Y., 1984.

Editor's Choices:
A Sand County Almanac, by Aldo Leopold (Oxford University Press, N.Y., 1989 or Ballantine Books, N.Y. 1986).

An absolute necessity for any lover of the outdoors. Originally published in 1949, these essays by the "father of wildlife management" are unequaled in style, sensitivity, and depth. You will find yourself going back to them over and over again.

Of Wolves and Men, by Barry Lopez (Charles Scribner's Sons, N.Y., 1978).

One of my very favorite authors, Barry Lopez presents a thorough, well-documented study of the wolf, covering its biology, ecology and historical place in culture. This is a beautifully written, thought-provoking, truly readable book, not at all your typical "natural history" type of reading. □

Boat Ramp of the 21st Century

The Virginia Department of Game and Inland Fisheries has completed an innovative new boat slide at the Kellys Ford Area on the Rappahannock River in Culpeper County. Kellys Ford is located on the south side of Route 620 on a small portion of the Department's C. F. Phelps Wildlife Management Area. The boat slide, designed to launch johnboats and canoes, consists of a 12-foot wide series of stepped 6-inch by 8-inch timbers that are mortised at joints and anchored to the river bank with steel stakes to withstand river currents during periods of high water.

The boat slide serves two purposes. First, it provides a set of steps for boaters, fishermen and hunters to safely negotiate the slippery, 8-foot high river bank while launching and retrieving their boats. Secondly, a 44-inch wide timber "cradle" in the center of the boat slide stabilizes small boats as they are slid up and down the boat slide.

Once you use the Kellys Ford boat slide, please let us know what you think of it! In an effort to improve on its design before constructing the second one some 20 miles downstream at Motts Run Access Area, the Department is soliciting input from users of the Kellys Ford boat slide. Suggestions should be directed to the Virginia Department of Game and Inland Fisheries, Lands and Engineering Division , Attn: Mark Wood, 4010 West Broad Street, Richmond, VA 23230-1104.

This project was funded from state hunting and fishing licenses and also from federal excise taxes on motorboat fuel and fishing equipment. □

George Washington Celebrates a Birthday

George Washington (National Forest, that is) is 75 years old this year. Encompassing more than one million acres, the George Washington National Forest (GWNF) is the largest block of public lands in the Mid-Atlantic region. Seventy-five years ago, this was "the land nobody wanted." Because so much land in the East had been damaged by abuse, the forest was created as a result of the Weeks Law of 1911, which authorized the purchase or exchange of federal land to protect watersheds and water supplies.

Today, the GWNF has land in 17 counties, with 13 in Virginia: Rockingham, Augusta, Rockbridge, Bath, Alleghany, Botetourt, Amherst, Shenandoah, Warren, Page, Highland, Nelson and Frederick Counties. A haven for the hunter, angler, hiker, and wilderness lover, there are more than 850 miles of trails in the forest, including about 60 miles of the Appalachian Trail. Camping is permitted in the 27 developed campgrounds as well as in most all of the forest. For fishing opportunities, the Forest has more than 1,287 miles of streams and 3, 190 acres of lakes and ponds. And, there are three public rifle ranges on the forest with more being developed.

For more information on recreational opportunities in the forest, call or write;
W. Terry Smith, Public Affairs Officer
George Washington National Forest
Harrison Plaza, P.O. Box 233
Harrisonburg, Va 22801
703/433-2491, ext. 233

Hunters Give Back to Wildlife

Ducks, geese and other wildlife will continue to benefit from 58,000 acres of wetland habitat from New Jersey to Texas to Manitoba, Canada, because of more than $11 million largely provided for by the hunters of this country.

The federal Migratory Bird Conservation Commission recently approved 25 projects to buy, lease, or otherwise enhance wetland habitat with funds straight out of the hunter's pockets. Eight of these projects, covering 7,700 acres, will be paid for with $4.8 million from the Migratory Bird Conservation Fund. The Fund consists primarily of money received from the sale of the Federal Migratory Bird Hunting and Conservation Stamp (the federal "Duck Stamp") which must be purchased by all waterfowl hunters 16 years and older. By law, this money must be used to acquire waterfowl habitat.

The Commission also approved $6.8 million for 17 projects under the North American Wetlands Conservation Act. This legislation provides partial funding for wetlands conservation projects in Canada, Mexico and the United States. Funds come from interest on federal excise taxes on hunting equipment sales, fines from violators of the Migratory Bird Treaty Act, and private contributions.

The biggest projects approved were $1.9 million to acquire and manage 7,000 acres of cypress swamp at Caddo Lake in northeastern Texas and $1.3 million to protect and enhance 6,000 acres of critical shorebird acres in the Maurice River on the New Jersey side of the Delaware Bay.

And that's not all! So far in 1992, the Commission has approved $50 million for 88 projects for waterfowl and other wildlife in the United States, Canada and Mexico.

Who says sportsmen don't pay for conservation? □

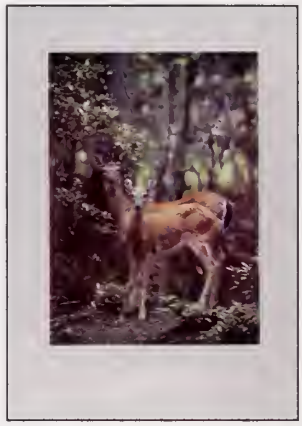
IN MEMORY OF...

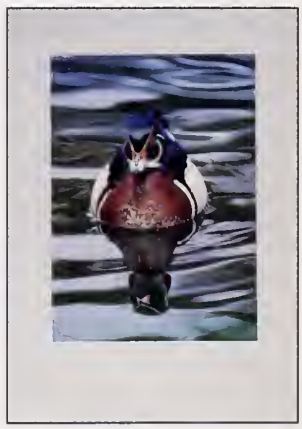
David Watson and William and Geraldine Landis made a generous contribution to the Virginia Department of Game and Inland Fisheries in memory of their friend Paul William Ebersberger of Goldvein, VA who died at the age of 53 on April 11, 1992. David Watson has requested that their contribution in Paul Ebersberger's name be used to help fight poaching of black bear and deer. Bill Landis shared the following reminiscence with us about their friend:

"I knew Paul for only two years, but counted him as a valued friend. Two memories stand out. One memory is of his bulldog determination. If he was convinced of the fact, nothing and no one could change his course of action. If he thought it was right, he did it. Period.

The other memory is of his feelings about the environment and conservation. An avid hunter and outdoorsman, Paul insisted on leaving the woods just as he found them, or better. On a trek in the woods with Paul, we could count on picking up every piece of brass, scrap of lunch, or anything else alien to the natural surroundings, even if we hadn't put them there. If he used a hunting cabin, he left it clean for the next person, with firewood replaced and neatly stacked. He knew his weapons and weapons safety. Paul was an environmentalist, and a conservationist, and he demonstrated his convictions by his actions.

We will miss him."





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Recipes

By Joan Cone

Frog Legs - From Pond To Pan

As summer twilight fades, you can hear the loud "heronk. . . heronk," of large bullfrogs croaking among lily pads and along marshy shores. After dark you can take a flashlight and using a frog gig, go after them.

After you have bagged your frogs, you must cut off the legs and skin them. Then you will have frog legs, an outstanding delicacy. Just do not overcook them, as too much frying or sautéing makes them tough.

MENU

Curried Crab And Corn Soup
Sautéed Frog Legs
Baked Potatoes Franco-American
Green Beans With Pecans
Cucumber Salad
Peach Cobbler

Curried Crab and Corn Soup

3 tablespoons margarine or butter
3 tablespoons flour
2 cups milk
1 cup chicken broth
1 can (7 ounces) whole kernel corn, drained
8 ounces crabmeat
3/4 teaspoon curry powder
Salt and freshly ground pepper to taste
Chopped fresh parsley

Melt margarine in a 2-quart saucepan over medium heat. Add flour and stir well until blended with the margarine. Gradually add milk, stirring constantly to prevent lumping. Add broth and bring to a boil, stirring frequently. Add corn, crabmeat and curry powder and simmer for 5 minutes. Season with salt and pepper and garnish with parsley. Makes 4 servings.

Sautéed Frog Legs

6 to 8 pairs frog legs, skinned
Milk
Salt and pepper
Flour
4 tablespoons margarine or butter
1 tablespoon chopped parsley
1/2 cup white table wine or chicken broth
Juice from whole lemon
2 shallots, chopped

Cut skinned frog legs in half. Soak in milk in the refrigerator for 6 to 8 hours prior to cooking. Before cooking, dry on paper toweling. Add salt and pepper to flour and roll frog legs in flour mixture. Sauté in hot margarine until lightly browned and fork tender—about 5 to 7 minutes. Legs will not be too brown due to lack of skin. **Do not overcook!** Legs will become very tough with overcooking. While legs are sautéing, add chopped parsley. Remove legs to a warm platter and add wine or broth, lemon juice and chopped shallots to pan drippings. Bring to a boil and pour over legs. Serves 3 to 4.

***Baked Potatoes Franco-American**

5 russet potatoes, weighing about 1/2 pound each
1 teaspoon oil
5 tablespoons butter
1/3 cup minced chives
1 teaspoon or more salt
Freshly ground pepper

Preheat oven to 425 degrees. Scrub potatoes clean and rub the oil on their skins. Bake in the middle of the oven for 30 minutes. Puncture the skins to let the steam escape, and bake for 30 minutes more. Split the potatoes in two lengthwise. Scoop out the flesh and mash it with an old-fashioned potato masher, a ricer or through a strainer, with 4 tablespoons of the butter. Fold the minced chives into the potatoes and season with salt and freshly ground pepper. Fill the shells of 4 potatoes with the mashed potatoes. Dot with the remaining butter and bake for 5 more minutes. Serve immediately. Serves 4.

**A Passion for Potatoes*, by Lydie Pinoy Marshall, Harper Collins Publishers, Inc., 1992.

Green Beans With Pecans

1 pound green beans
4 cups water
1/2 teaspoon salt
2 tablespoons margarine or butter
1/4 cup chopped pecans
1/8 teaspoon pepper

Wash beans; trim ends and remove strings. Bring water and salt to a boil in a large saucepan. Add green beans and cook, uncovered, 10 minutes or just until crisp-tender. Drain and set aside. Melt margarine in a nonstick skillet and add pecans and cook until golden brown, stirring often. Add beans, toss gently and cook until thoroughly heated. Sprinkle with pepper. Makes 4 servings.

Cucumber Salad

2 tender cucumbers, peeled and cut in paper-thin slices
1/2 cup sour cream
2 tablespoons lemon juice
1/2 teaspoon salt
1/2 teaspoon sugar
dash of cayenne pepper

Combine all ingredients and chill well. Serves 4 to 6.

Peach Cobbler

1/2 cup margarine or butter
1 cup soft White Lily flour or 1/2 cup all-purpose flour and 1/2 cup cake flour
1-1/2 teaspoons baking powder
1/2 teaspoon salt
1 cup milk
1 cup sugar
2 cups peaches, peeled and sliced

Put the margarine in a 9 x 13-inch oven-proof serving dish and place in a 350 degree oven to melt. Mix together flour, baking powder and salt in a bowl and stir in the milk and sugar to make a batter. Remove the hot dish with the melted margarine from the oven and pour in the batter. Spoon the peaches and the collected juice evenly over the batter. Place the dish back in the oven and bake until the batter is browned and has risen up around the fruit, about 30 to 40 minutes. Makes 8 servings. □

Photo TipS

By Lynda Richardson

Kodachrome vs. Fujichrome

People ask me all the time "What type of film is best?" And each time I respond, "Well, it all depends...." It all depends on the time of day, lighting conditions, subject matter, the effect you want and use of the final image.

There are numerous film products on the market and they can basically be divided into two groups: slides and prints. Since my work is shot primarily for the publications market, I use color slide film. Slides are used by magazines, like *Virginia Wildlife*, because slides are the best medium for reproduction. If you want to become a published photographer, you will need to learn about slide film.

There are several types of slide film on the market and each film has a special characteristic or situation which it handles best. Traditionally, Kodachrome 64 was the primary film for magazine shooters. It's a beautiful film for the warm tones of an early morning sunrise or the golden glow of a sunset. On the average, its color rendition is true under most conditions and its ability to hold shadow detail cannot be surpassed. Kodachrome is also said to be an "archival film," meaning it will last years (I've heard 25 years) before it begins to fade. And because of its tight grain structure, Kodachrome 25 and 64 films are quite sharp.

The down side to Kodachrome is the fact that there are few labs which process it. Because of this, local camera stores must send it out of town for processing. That means it is days to weeks before you can see the processed film.

Fujichrome films are your other option for top quality slide films. On overcast days, Fujichrome by far outshines Kodachrome with its vibrant color saturation. Though colors seem a bit more vivid than "real life," these colors are breathtaking. Reds and greens literally scream at you. Not only is Fujichrome more colorful, it can be processed in many labs across the country because it was formulated for standard E-6 processing. Because of this, processing can be as quick as an hour and best of all, the magazine editors love it.

The down side to Fujichrome is that it's not that great on bright, sunny days, particularly around noon. Its colors may appear oddly surrealistic in bright sun while Kodachrome records the scene more accurately. Also, Fujichrome doesn't seem to handle shadow detail as well as Kodachrome. These areas tend to appear a bit muddy, loosing detail. Lastly, Fujichrome, because of its E-6 processing, is not considered to be an archival film.

Deciding which film is best for you may not mean selecting one type. I choose film for its ability to handle situations I'll be shooting in and how I want the final image to appear. So, the best way to make an educated decision is to experiment and discover what's right for you. Grab a couple rolls of Kodachrome and Fujichrome, and shoot each under similar situations. See if you don't agree with me when I say,"Well, it all depends...." □

Compare for yourself: This marbled salamander was photographed on an overcast day with Kodachrome 64 ***(left)*** *and Fujichrome 50* ***(right).***

Photos by Lynda Richardson.

By Spike Knuth

No Free Lunch?

The kingfisher just sat there on a wire overlooking a small marsh pond. I assumed it was fishing as it sat with head cocked sideways, looking down. But then I noticed a great blue heron wading in the pond directly below the kingfisher. Was he just watching the heron? Had the heron moved into the kingfisher's fishing hole and now it was just waiting for it to leave? I was on the south end of Back Bay in a portion of the MacKay Island National Wildlife Refuge. After a walk around the trail, I noticed that the kingfisher had moved to a spot farther down the road over another pond. As I drove by I was surprised to see that it was again perched over the stalking heron!

What is that kingfisher's fascination with that heron, I wondered? Just about the time my aging brain was making the connection, the heron's beak lashed out at a small school of fish and almost simultaneously the kingfisher plummeted and plunged into the water and emerged with a wiggling fish himself. The kingfisher had simply been following the heron around, taking advantage of its stalking abilities waiting for it to scare up a school of fish from the murky pond!

Another example of an animal that benefits from associating with another is provided by the snowy egret. This little white egret with the bright yellow feet is a great opportunist when it comes to getting a meal with the help of others.

The "snowy" will commonly seek out a group of feeding shovelers, the ducks with the spoon-like bills. At times, shovelers will feed in small groups of eight to a dozen or more birds. They'll form a loose circle where they kick with their feet and spin their bodies, first one way then the other, stirring up the bottom mud. With their unique bills, which are equipped with strainers called lamillae, they can sift out tiny crustaceans and other aquatic life as well as seeds and roots of aquatic plants.

The snowy egret is well aware of the potential to get a quick and easy meal due to the stirred-up bottom. They will drop down to wade alongside or among the shovelers, dancing and jabbing as tidbits of food become dislodged and suspended by the moving, swirling water.

Snowy egrets also frequently team up with glossy ibises. The glossy ibis has a big, down-curved bill which it uses very actively while feeding. It moves quickly with head down, feeding vigorously, moving its bill back and forth like a scythe through aquatic vegetation, stirring up a lot of aquatic life. The snowy kind of tags along, taking advantage of what the ibis scares out.

Mergansers, gulls and terns have a relationship of this type at certain times of the year. Mergansers will frequently group up to feed, feeding either single file or two-by-two, diving for fish. One day on Fishhouse Bay at the Game Department's Hog Island WMA in Surry County, I watched as about 15 or 16 hooded mergansers dove and fed on what must have been a large school of small fish. Just above them hovered a number of ring-billed gulls and common terns. From time to time the water in front of or to the side of the mergansers would erupt with a spray of small fish. The gulls would hover just over the surface, and pluck out the panicking fish or just swim alongside the mergansers and grab the fish attempting to escape. The terns hovered higher above and dove in typical tern fashion on the fleeing fish. All of this is not unlike the feeding frenzies offered to gulls, terns and pelicans when a school of bluefish chases menhaden to the surface on Chesapeake Bay.

If you look hard enough, you'll find other good examples of one species getting a benefit from another. One of the more interesting examples of this was written up in an article in *Virginia Wildlife* some years back by wildlife biologist, Jack Raybourne. He related how after a heavy snowfall, wild turkey flocks would associate themselves with a herd of deer. The deer had the ability to dig down with sharp hooves to get at acorns and greens under the snow. The turkeys would actually get down under the deer, tickling their bellies, to get at the holes in the snow which gave them access to the acorns and greens.

The next time you rototill the garden or mow the lawn, watch how robins, mockingbirds and other birds drop in almost immediately to take advantage of what you uncovered. Gulls commonly follow the plow to feed on grubs and other insects that are turned up. The deeper one looks into these associations, the more one realizes how interdependent all life is. □

Safety

Lightning Strikes Again

by Col. William Antozzi, Boating Safety Officer

In June, lightning killed a spectator during the first round of the U.S. Open Golf tournament at Chaska, Minnesota. Last August, lightning killed another spectator at Crooked Stick Golf Club in Carmel, Indiana. Those incidents capture headlines, but lightning activity is not peculiar to golf courses.

Thunderstorms spawn lightning and high winds, both of which can spell danger, particularly to those outside under the sky. The hot days of summer are just right for fast moving thunderstorms which can cause property damage and threaten lives. Each year about 200 Americans are killed by lightning with most of the fatalities occurring in rural areas. Virginia's waterways are also dangerous in such storms.

American Red Cross safety officials offer the tips listed below to guard against death or injury in thunderstorms:

1. If outdoors, get inside a building when a storm strikes.
2. Refrain from telephone use because lightning's electrical current can travel along telephone lines.
3. Stay clear of sinks, showers and toilets. Lightning can also travel through plumbing systems.
4. Open fields and hills are dangerous.
5. Never stand under a tree because lightning can travel through the water in a tree and involve anyone nearby.
6. If a car or truck is nearby, get inside and don't touch the sides.

Anyone in the water should immediately get out when a thunderstorm threatens, because an estimated 100 people in or on water are killed or injured by lightning each year in the United States, according to Steve Eiman, Administrator of the Lightning Protection Institute in Ho-Ho-Kus, New Jersey.

Boaters have special problems because it is not always easy to get to shore and take cover. Thunderstorms threaten boaters with both lightning and high winds. They should try to seek shore shelter. After securing their boats, a building provides the best shelter, but getting behind sand dunes or low hills is an alternative.

Strong winds can make it difficult to go ashore, especially if the shore is inhospitable with mud flats, rocks and trees making landing hazardous or impractical.

If boaters can't go ashore because of obstructions, or if they are too far out to get into a safe location, it might be best to ride the storm out. Vessels can run before a storm, but the danger of capsizing from a broach or pitchpole resulting from following wind and waves makes that a risky option. The alternative is to head into the storm, going just fast enough to maintain headway and control. If the vessel has a mast, passengers should stay away from it since it is the tallest part of the boat and most vulnerable to a lightning strike. The high winds accompanying many thunderstorms are more dangerous to boaters than lightning, but when lightning strikes it is devastating. Boats equipped with lightning rods running from the highest point to a ground plate in the hull or directly to water have added protection.

Watch the sky and listen to forecasts. If a thunderstorm is imminent, stay in a building until it passes. □

photo by Soc Clay.

We're fighting for their lives

Many of Virginia's wildlife are in danger. Suffering from habitat loss and the dangers of pollution which threaten their survival, many species in the state are struggling to survive.

The Department of Game and Inland Fisheries is responsible for the protection and conservation of all wildlife in Virginia, but we receive no state tax dollars, and we need your help to do our job. Help us fund critical research and management programs for the state's nongame and endangered species by contributing to our Nongame Wildlife Fund, which is supported solely by voluntary contributions made through our state tax-checkoff program and direct giving.

To make a donation, simply send your tax-deductible check (made payable to the Treasurer of Virginia), to: Virginia Nongame Wildlife Fund-VW, Virginia Department of Game and Inland Fisheries, P.O. Box 11104, Richmond, VA 23230-1104.

Bald eagle; photo by David Vinyard.

Resource Guide Available on Virginia's Endangered Species

Order the only comprehensive resource guide on Virginia's Endangered Species for $32.95 (softcover) or $59.95 (hardcover). This 675-page guide identifies and describes more than 250 rare and endangered plants and animals in Virginia. Produced by the Virginia Department of Game and Inland Fisheries and other state natural resource agencies, this book documents the latest scientific information on Virginia's endangered species, information which is available in no other publication. Send your check plus 4.5 percent sales tax and $3.00 shipping and handling charges to: McDonald and Woodward Publishing Company, P.O. Box 10308, Blacksburg, VA 24062-0308. Phone: (703) 951-9465.

To order a **Virginia's Endangered Species poster** of the illustration featured left, please write a check for $8 made payable to: Treasurer of Virginia, and send to: VA Endangered Species Poster Offer, Attn: Diane Davis, VDGIF, P.O. Box 11104, Richmond, VA 23230-1104.

Our *Virginia Wildlife Sportsman's Calendar* Informs You Every Day!

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April 1993

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12 PALM SUNDAY ☼ 6:39 ❋ 7:42 7:00A–12:00N	13 ☼ 6:38 ❋ 7:43 8:00A–1:00P	14 ☼ 6:37 ❋ 7:43 9:00A–2:00P	15 ☼ 6:35 ❋ 7:44 10:00A–3:00P	16 ☼ 6:34 ❋ 7:45 10:30A–3:30P	17 ☼ 6:32 ❋ 7:46 FULL MOON 11:00A–4:00P
18 ☼ 6:31 ❋ 7:47 12:00A–5:00P	19 EASTER SUNDAY ☼ 6:30 ❋ 7:48 1:00P–6:00P	20 ☼ 6:28 ❋ 7:49 2:00P–7:00P	21 ☼ 6:27 ❋ 7:50 3:00P–8:00P	22 ☼ 6:26 ❋ 7:51 3:30P–8:30P	23 ☼ 6:25 ❋ 7:52 4:00A–9:00A	24 ☼ 6:23 ❋ 7:53 LAST QUARTER 5:00A–10:00A
25 ☼ 6:22 ❋ 7:53 6:00A–11:00A	26 ☼ 6:21 ❋ 7:54 6:30A–11:30A	27 ☼ 6:19 ❋ 7:55 7:00A–12:00N	28 ☼ 6:18 ❋ 7:56 8:00A–1:00P	29 ☼ 6:17 ❋ 7:57	30 ☼ 6:16 ❋ 7:58	VIRGINIA Department of Game ☼ SUNRISE ❋ SUNSET Shown as prevailing Richmond time, standard

Interesting Animal Activities → 17 Flounder back inshore at Wachapreague

Holidays → GOOD FRIDAY

Sunrise and Sunset → ☼ 6:32 ❋ 7:46

Moon Phases → FULL MOON 11:00A–4:00P

18 Spring Gobbler season opens Record crappie 4 lbs. 3 oz. Jeff Bates, 1987 Gaston Reservoir ← *Fishing and Hunting Seasons*

PASSOVER ☼ 6:31 ❋ 7:47

12:00A–5:00P ← *Prime Times to Fish and Hunt or Wildlife Watch*

Use the gray card in this magazine to order your calendar